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# NEW YORK STATE JOURNAL OF MEDICINE



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# NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

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No. 1

## EDITORIAL DEPARTMENT

### AN OFFICIAL CALL.

*To the Officers and Members of the Medical Society of the State of New York:*

Beginning April 27, 1915, the 109th Annual Meeting of the Medical Society of the State of New York will be held for the first time in its long useful career in the Queen City of the Lakes, upon invitation of the Medical Society of the County of Erie and the city of Buffalo. The reputation of Buffalo as a convention city is so well-known that it is unnecessary to sing her praises. Be assured that measures have already been taken to insure your comfort and happiness while her guests. From the present state of the preparations a meeting is assured the usefulness and attractiveness of which will fairly compel you to come early and to stay late. Fortunately, the 65th Infantry Armory of the National Guard has been offered and accepted so that we shall meet in one of the most beautiful structures in the world, the appointments of which permit the entire program of the State Society to be carried out under one roof with the added advantages that it will be possible to pass from one section to any other in less than one minute and in one-half day's session to hear without loss, six different papers in six different sections.

A propitious feature of this unexcelled building is its location just off the center of activities,

so that the distractions of a bustling city can not disturb that state of mind and body wherein one absorbs and enjoys with keenness the scientific treat in store for all. The armory affords all the comforts of home so that interest in the work going on fairly grips you and you are pleasantly forced to stay until the lights go out. Every need for personal comfort is to be provided; lounging, smoking and writing rooms, while an excellent restaurant will make it unnecessary to leave the building for meals. These ideal arrangements will permit members to touch elbows, exchange ideas and know each other better for days to come.

The scientific program comprises papers and discussions in six sections:—Medicine; Surgery; Obstetrics; Pediatrics; Eye, Ear, Nose and Throat, and Syphilis. In all of these, great care is being exercised to meet the needs of the membership and to bring before it men of great repute, not only from the Empire State, but from other states and from foreign countries.

The Army, the Navy and the Public Health Service of the National Government are to contribute to our edification. The President of the American Medical Association, Dr. Victor C. Vaughan, is to honor our convention with the oration on medicine. For the first time in the history of any large medical society the subject of syphilis—a universal scourge equal to that of

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tuberculosis—is to be exhaustively presented in the endeavor to overcome the unjustifiable neglect of that attention and analysis which so subtle and vicious a disease affecting the efficiency and health of the civilized world demands at the hands of the profession; to eliminate the erroneous idea that this disease is confined to the low and vile, the result of immorality; to show that with almost equal frequency and often innocently the high-born and righteous are afflicted, to teach easy methods of early exact diagnosis, and to emphasize the social-economic necessity of prompt administration of curative treatment in order to stamp out from modern civilization this mediæval horror.

The scientific work is being further broadened by the introduction of an innovation—a series of popular talks distinct from, but parallel to the section meetings to come in the late afternoons and evenings. The time is ripe for this Society to perform one of its greatest functions, to put the weight of its authority upon right enlightenment of the people on matters of public health and thus to protect them from the evils of ignorance and charlatanry. Lecturers eminent in special fields are being enlisted. It is believed that this movement will have an enormous influence upon the attitude of the public toward the altruism of the profession, and aid in creating a better understanding of its methods in the treatment and prevention of disease.

In the many commodious booths of the large, easily accessible Exhibit Hall on the main floor of the armory will be found a great variety of exhibits touching the many needs of the daily life of the physician. In addition will be found exhibits illustrating National, State and Municipal public health matters; hygiene and sanitation; hospital and sanitarium construction and equipment; medical education, and special prophylactic exhibits, such as conservation of vision, mental hygiene, moral prophylaxis, and prevention and cure of tuberculosis. All of these exhibits will deserve careful study and many visits.

In so far as the social side of the meeting is concerned opportunities for recreation will not be lacking. Plans are maturing which assure that an enjoyable time awaits not only members but also their wives and daughters. The profession of Buffalo fully appreciates its responsibility and will make notable this part of the convention. There will be a military pageant in honor of our distinguished guest, Brigadier Gen-

eral W. C. Gorgas, Surgeon General of the United States Army. Alumni reunions with their accompanying good cheer. The annual banquet—the only event to be held outside the armory, promises to eclipse all past banquets, not only in the way of good things to eat and drink, but also in the opportunity to listen to speakers of national reputation. And ever and always at Buffalo's door that crowning glory of Nature—the Falls of Niagara.

Begin now to perfect your plans for a visit to Buffalo—Queen City of the Lakes—at the time of the 109th Annual Meeting of the Society. Suggest and encourage friends and college chums to imitate your decision to be present. Come and meet your old friends, renew past acquaintance and make new ones among those whose sympathies and work are in your chosen profession.

GROVER W. WENDE, M.D.

#### “FUNCTIONS OF OUR MUNICIPAL BOARD OF HEALTH.”

THAT there exists a pronounced antagonism to some of the administrative activities of the Metropolitan Board of Health by an integral part of the medical profession, requires no further proof than the bare assertion. The Department is aware of this feeling and wisely adopts a conciliatory course in combating this hostility, by inviting public discussions on its interpretation and its justification in carrying out its methods of Public Health Service.

We cannot recall a period in which the Department was not a target for assault by members of the profession who rightly or wrongly felt personally aggrieved by its course. It has remained for Dr. E. Eliot Harris to come out boldly and attack the Board of Health, not on account of any personal grievance, but upon the broad principle that it is assuming prerogatives foreign to its creative purpose.

In a paper he read before the Society of Medical Jurisprudence in a symposium on the “Functions of our Municipal Board of Health from the *Standpoint of the Physician*,”\* he endeavors on high ethical and economic planes to maintain his contentions.

While we do not oppose the doctor's postu-

\* Dr Harris's paper is published in this issue. See page 32.

lates we are skeptical of their acceptance by the medical profession as a remedy for the evils of which he complains. He states,—

“Public Health Service is a part of medical ethics.”

“The people have saved and the physicians have lost millions of dollars in fees through the work of the Board of Health in lessening contagion and communicable diseases.”

“Notwithstanding all the economic losses of the profession, physicians will continue to foster Boards of Health to the crack of doom.”

“Physicians can see a tendency of the present Health Department to encroach upon their means of livelihood.”

The foregoing implies that the Board of Health should observe the precepts of ethics which govern the medical profession; that it violates these precepts, not in confining itself to the prevention of disease but in practicing personal medicine, thus unrighteously invading territories belonging to others; that it should confine its activities to the prevention of diseases which imperil the health of the community.

He gives a concrete example of the Department's assumption of power in its jurisdiction over child hygiene, which includes under the Department's interpretation of its privileges, the treatment of diseases of the eye, ear, nose, and throat of a non-contagious character. He further suggests that the Bureau of Child Hygiene should be disbanded and its parts distributed between the Board of Education and the Department of Charities.

In all innocence we venture the query “what very great difference will it make to physicians whether the poor be attended by the Health Department or by the Department of Charities provided proper precautions are taken not to pauperize charity?” The name “Health Department” has not the humiliating signification to the poor as “Department of Charities.”

The parents of the children are in a measure justified in believing that treatment given by the Department is a contribution to the public health and not entirely personal. In this belief they offer no serious objections to their children receiving treatment through the Department's agencies.

That some parents who are able to pay for

treatment by a private physician avail themselves of the Department's charity is an evil difficult to overcome, to which, like other evils, we must submit until a more stringent rule can be established.

What the future may bring forth we cannot say, but from our knowledge of the facilities of the Health Department and that of the Department of Charities as they are at present organized for the administration of the Bureau of Child Hygiene we are inclined to favor its retention by the former over that of the latter department.

If we claim altruism as a doctrine of our profession why should we complain of a loss of income if that loss is sustained by the treatment of the sick poor by the civic authorities?

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### THE HOLIDAYS.

IT is the JOURNAL's hope that during the Christmas-New Year holidays you were able to throw off the harassments incidental to life and in a spirit of buoyant merriment snatch from the shoulders of the Fleeting Year its mantle patched with misfortune, seamed with disappointments, and fling it to the winds of Forgetfulness. He is a hardened and calloused wretch who does not, at the approach of Christmas, feel a mellowness of spirit come stealing o'er the bitterness of his soul against existence. Unconsciously his mind reverts to his youthful days when Christmas Eve was filled with the fever of joyous expectation. Alas! with maturity the eve of every day is filled with feverish expectation of what the morrow has in store for us. From a fitful sleep some awake to find a bauble gift, some despair—some a new-found strength born of courage. With maturity, also, how rapidly the years go by. We welcome the dawn of each new one with mingled feelings of joy and apprehension. Lavish wishes of good-will are so universal in application, so trite in expression, that they fall as unheedingly upon the ear as they trippingly fall from the lips of the speaker. Yet withal, we welcome them as fleeting thoughts of amity and good-will. With the hope that its wish will germinate and fructify, the JOURNAL wishes that for the New Year and for the years that are to follow you will be endowed with the gift—to love your fellow-man, to meet adversity with fortitude, defeat with courage and success with modesty.

## Original Articles

EXOPHTHALMIC GOITRE AND ITS  
TREATMENT.\*By JOHN ROGERS, M.D.,  
NEW YORK CITY.

**C**LINICALLY all the different forms of acquired thyroid disease, except cancer, seems more or less related. That is the simple hypertrophies of the gland, the degenerated goitres and at least the milder cases of myxoedema and of exophthalmic goitre are capable of giving symptoms especially when the abnormality is of long duration, which indicate that one type of these disorders can change into another. As a partial recognition of these observations the terms hypo- and hyperthyroidism have gradually crept into the literature, and the designation of hypothyroidism is now in general use, suggesting, rather than exactly indicating, a condition which may, if unchanged, progress into the more advanced disturbance of myxoedema. The word Hyperthyroidism is not as clearly defined but seems to indicate an incipient form of Graves disease or true exophthalmic goitre. In an attempt to render this confusion less it is proposed to trace out step by step that which seems to be the natural history of thyroid disease in general and thus show the relations, at least chronologically, of one type to another. Cancer of the thyroid will be omitted from the discussion as it seems to have no connection with the other diseases of this organ.

## COURSE OF THYROID DISEASE.

The term "simple" goitre usually means a simple hypertrophy of the thyroid, or a multiplication of all the glandular elements without any discoverable alteration in structure other than increase in size. This simple goitre, or more exactly simple hypertrophy, always takes place to a greater or less degree before the development of the degenerative changes which mark the formation and development of the fibrous, cystic or other true goitres or localized diseases of the thyroid.

In the next place, myxoedema, which is generally regarded as originating in an atrophy and not in a hypertrophy of the gland, is much more common in patients with long standing and badly degenerated goitres than in those who give no history of thyroid enlargement. Hence, a primary atrophy of the gland seems the exception rather than the rule. That is, at least some degree of thyroid hypertrophy appears to be the regular or most frequent beginning of what may later prove to be a true myxoedema.

Similarly, typical exophthalmic goitre may appear without any noticeable increase in size of the gland, but such occurrence is exceptional. It is far more common for the disease to occur

after there has existed some degree of thyroid enlargement, and generally for a considerable period. Moreover, no simple or degenerated goitre seems exempt from the possibility at one time or another of showing the symptoms which are characteristic of Graves disease, and hence it is reasonable to regard simple hypertrophy of the thyroid as the most common or "regular" first symptom or first stage in all of the acquired thyroid diseases.

Coincident with, or following, the appearance of the hypertrophy there commonly occur symptoms of a subjective more than objective nature, which are now regarded as expressing deficient functioning by the thyroid, or hypothyroidism. "Simple" goitre occurs at any age and under innumerable conditions and circumstances, but is most frequent at certain transition periods of life and during or after physiological processes which require much expenditure of energy. Its appearance in family or related groups of individuals is often noted and there can be little doubt that the peculiarity follows the Mendelian laws of heredity.

## THE TRUE OR DEGENERATED GOITRES.

From these first and second stages, represented by thyroid enlargement and hypothyroidism, the disturbance may subside or advance in one of three directions. If towards goitre, or the degenerative changes in the gland which are characterized by alterations not only in the size but in the outline and consistency of the organ without other marked objective symptoms, these changes gradually make their appearance or develop quite rapidly and sometimes suddenly. The conditions or circumstances which precede or attend the local alterations in the gland seem to be in general the same as those present during the primary stage of simple hypertrophy; and just before the increase in size or in density occurs some evidences of hypothyroidism may be noted, although the opposite or hyperthyroid signs appear to be more frequent, possibly because they are more easily detected.

After the goitre has become apparent it may persist indefinitely unchanged or it may gradually shrink or gradually enlarge and sometimes cause dangerous pressure upon the trachea; more frequently however it is accompanied for longer or shorter periods by signs of hypo or of hyperthyroidism, and these advance or recede as in the cases which are generally regarded as suffering from functional disease from the outset. These so-called functional diseases represent the other two directions in which the primary hypertrophy may progress.

## HYPOTHYROIDISM AND MYXOEDEMA.

After the development of simple hypertrophy with its attendant or subsequent hypothyroidism the disturbance may advance towards and into myxoedema. The usual text-book description for this condition is of chronic disease of middle life or later, which begins insidiously with atro-

\*Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

phy and not with hypertrophy of the thyroid. But it cannot be disputed that the disorder frequently occurs in persons who have possessed a more or less quiescent goitre for months or years, and that after death the characteristic changes in the thyroid vesicles are the same in the goitrous and the atrophied glands. The only difference is in the amount of functionless structure. The so-called typical or idiopathic myxoedema which begins after middle life with a primary atrophy of the thyroid is a rare disease in my experience, while the myxoedematoid conditions which develop in long-standing goitres are very common and symptomatically the same. There is one noteworthy difference, however; the myxoedema which occurs with a goitre is generally much more easily relieved than the disease which is accompanied by no thyroid enlargement. Indeed, typical myxoedema, or that which follows primary atrophy of the gland, seems to be a very serious if not an irremediable condition. It is not the easily cured disease ordinarily described. The third direction which thyroid disease may pursue is from simple hypertrophy and hypothyroidism into

#### HYPERTHYROIDISM AND EXOPHTHALMIC GOITRE.

These terms should not be used as though they were synonymous. The primary, or first stage of simple hypertrophy and the next of hypothyroidism may directly and either rapidly and without detection of the hypo stage, or gradually and with the more noticeable signs of hypothyroidism, advance into the third period of the disease or that of hyperthyroidism. This, in turn, may be followed gradually or rapidly, though in only about 25 per cent of the cases, by the fourth stage or that of exophthalmic goitre which, like myxoedema seems regularly or in its most usual form to be the termination of a more or less chronic process.

Many cases remain for an indefinite period in the third, or hyperthyroid stage, and these often show alterations in symptoms; sometimes those of excessive activity of the gland predominated, and again those of deficient functionation. If recovery is to take place, however, the evidences of hyperthyroidism gradually grow less and usually occur at longer intervals, during which the symptoms of hypothyroidism are more or less distinct, and may not cease until the goitre or last symptom disappears.

On the other hand, death may occur at any time after the beginning of the third or hyperthyroid stage, but it is much less common in this than the fourth stage or that of exophthalmic goitre. The fatal end may come rapidly from an acute intensification of all the symptoms, or gradually, and after years with increasing signs of myxoedema. But the immediate cause of death is then more frequently from one of the complications which occur with a rising blood pressure. For the third stage, or that of chronic hyperthyroidism, if of long duration, sooner or later shows an increase in arterial tension, and

this is accompanied by cardiac and nephritic and other degenerative lesions.

#### EXOPHTHALMIC GOITRE.

Though regularly produced by hyperthyroidism, exophthalmos is not by any means a constant result of it. In my experience it is encountered in not more than 25 per cent. of the total number of individuals who give signs generally accepted as those indicating a greater than normal activity of the gland. Hence the necessity of the term hyperthyroidism; as ordinarily used it seems to imply an incipient condition which may result in one of a more serious nature. Exophthalmos regularly appears after and not before the other symptoms, and when it occurs it shows the incidence of the fourth stage, or that of typical exophthalmic goitre. This fourth stage of the disease is marked by a gradual and generally intermittent development of its distinguishing symptom. After this occurrence, the hope for recovery is distinctly less than before, and the probabilities of the development of complications is greatly increased. If the exophthalmos is only moderate and of recent development, a restoration to a completely normal state may take place. But the more pronounced this symptom and the longer it has existed the less is the hope of disappearance.

If recovery is to follow, the exophthalmos only subsides first when it has been slight or intermittent or of recent occurrence; next there is the same retrogression through the stage of hyperthyroidism and the mixed stage of hyper and hypothyroidism. Then follows a gradual predominance of hypothyroidism and possibly some enlargement and softening of the goitre, until after months or years this last symptom, or goitre disappears. More frequently, at least some traces of the exophthalmos persist and even outlast all other signs, including the enlargement of the thyroid. But if this abnormality persists long enough there will almost certainly follow a rising blood pressure and its attendant dangers. A glycosuria may appear, and is a dangerous complication. A psychosis has occurred often enough among my cases to receive mention as a not infrequent complication, especially of the fourth stage.

As in the previous stage, death may occur at any time and acutely in this fourth period, with an intensification of all symptoms or slowly after the elapse of years. Under the latter conditions there is almost invariably a gradual rise in the arterial tension. With it there regularly occur degenerative lesions of the heart which supersede the regular signs of hyperthyroidism until these become unrecognizable. Their place is taken by a myxoedematoid state, or one of hypothyroidism, and all that remains to recall or suggest the original difficulty is the exophthalmos. Though this termination is manifestly not typical exophthalmic goitre, it is the regular terminal, or fifth stage, of the process which passes through the four preceding stages.

Rarely the disease takes another form and develops without any appreciable enlargement of the thyroid. The stage of goitre and hypothyroidism does not occur, and that of hyperthyroidism appears to develop more rapidly or even suddenly, and may or may not be accompanied by more or less pronounced exophthalmos. This course of events is exceptional, but when it takes place without enlargement of the thyroid, or with but slight enlargement and that after the appearance of the other symptoms, the disease is generally of unusual severity, as is the case with acute toxæmic thyroidism, and it is exceptionally difficult to relieve by methods which are successful with hyperthyroidism in the presence of goitre. In other words, a condition in which there is great enlargement of the gland and signs of its excessive activity seems less to be feared than a similar condition with little or no enlargement of the gland, and the same is true of the typical myxoedema in which no perceptible goitre has occurred.

All the acquired abnormalities of the thyroid, with the exception of cancer, thus seem to begin with a single hypertrophy which is apparently physiological and not pathological, and is accompanied by more or less distinct signs of hypothyroidism. If thyroid disease is to follow, it advances from this point to the different forms of simple goitre; or through intensification of the signs of hypothyroidism with a decrease or increase in the size of the "goitre" into myxoedema; or through a more or less rapid change of the signs of hypothyroidism into those of hyperthyroidism, to which the symptom of exophthalmos finally, in the more severe cases, may be added. If exophthalmic goitre lasts long enough, a myxoedematoid state follows. Any simple goitre which has existed perhaps for years without the accompaniment of disturbances in other organs, may give rise to hypo or hyperthyroid symptoms and develop into myxoedema or exophthalmic goitre.

Recovery from hyperthyroid conditions may take place in any stage except the last, or fifth stage, and the prognosis seems better in the presence of goitre than when this symptom is absent. The prognosis is much worse after the development of exophthalmos than before, as over 84 per cent. of the deaths in hyperthyroid conditions in my experience have occurred in cases which have presented this symptom, and the more pronounced it is the worse the outlook both as regards disabling complications and the duration of life.

If recovery takes place, it is gradual and through a retracement of the steps which marks the advance in the disease. Restoration to health after the development of hyperthyroidism always passes through a period in which hypothyroid symptoms alternate with those of hyperthyroidism until they gradually supersede and entirely displace the latter. After the development of exophthalmic goitre this course toward recovery

through an alternating hypo and hyperthyroidism it often accompanied by the persistence of the exophthalmos even after the goitre and every other abnormal sign has subsided. With this exception, the enlargement of the gland is the last of all the signs of thyroid disease to disappear.

#### IRREGULAR TYPES OF EXOPHTHALMIC GOITRE.

The different manifestations which mark the different stages of functional thyroid disease when it advances in the direction of over-action of the gland, explain many of the types of so-called irregular exophthalmic goitre.

(a) Probably the most numerous are those which present thyroid enlargement and more or less marked evidences of hyperthyroidism but no exophthalmos. Such cases belong in the group which has not advanced beyond the third stage, and may never go beyond it. If, with the hyperthyroidism, there are also signs of hypothyroidism, the disease may be alternating between the second and third stages, and be gradually receding, or if the blood pressure is above 140 or 150 m.m. of Hg, advancing into its myxoedematoid termination. These cases often have had a quiescent goitre for long periods without other symptoms.

(b) Another considerable number show exophthalmos and pronounced signs of hyperthyroidism, but little or no goitre. These are truly irregular in that the absence of thyroid hypertrophy generally means a worse prognosis than the same symptoms with considerable enlargement of the gland. Partial thyroidectomy may slow the pulse rate and check or alleviate the nervous irritability, but it seldom cures this type of the disease. Many of these cases also seem to run a comparatively acute course and either die from toxæmic hyperthyroidism or pass early into the terminal or myxoedematoid fifth stage with its rising blood pressure and attendant complications.

(c) A small number of irregular cases may show exophthalmos and goitre with many peculiar nervous symptoms, but present very little or no tachycardia, which is generally accepted now as the most distinctive evidence of true hyperthyroidism. This type requires notice because radical operation or hemithyroidectomy generally is injurious.

(d) A small group of cases without any exophthalmos or noticeable goitre or without any easily recognized signs of the usual preliminary hypothyroidism or asthenia, pass from comparatively good health within a few days into toxæmic hyperthyroidism. In these a positive diagnosis cannot be made clinically unless some degree of thyroid enlargement is perceptible or unless at least Stellwag's sign of the "staring" eye is present.

(e) There are quite a number of patients who show some constant or intermittent signs of hyperthyroidism, usually of slight intensity, but in whom the results of treatment by checking the

activity of the gland strongly suggest that the thyroid disease is secondary to other and more important abnormalities. The most conspicuous symptoms pertain to the central nervous system and are manifested in headaches, or nervous irritability, or a psychosis, or a mental and physical asthenia out of proportion to the state of apparently good nutrition. Less often there are pronounced valvular lesions in the heart, or occasionally there is an unexplainable constipation or diarrhoea. Whenever the hyperthyroid symptoms are present, however, they advance or recede as in the more regular cases, and though much observation and study may be required the relative importance of the hyperthyroidism can generally be inferred and the treatment conservatively conducted.

In addition to these groups of irregular disturbances, in which the thyroid seems to participate symptomatically, there is sometimes described another under the designation of "Dysthyroidism." In my opinion this term should be restricted to cases which present an obvious enlargement of the gland limited to some particular portion of the organ and who complain of headaches or other symptoms not directly traceable to the thyroid and constant or intermittent disturbances having some of the characteristics of either hypo or hyperthyroidism. If in these cases the complaints can be relieved or cured by extirpation of the diseased area in the thyroid, it is fair to assume that the abnormal tissue gave origin to some peculiar substance which differed from the normal thyroid product and so caused the symptoms. The localized disease seems to act like a retention cyst which occasionally allows its pathological contents to leak into the circulation. I have seen a few cases of this kind in which intermittent or remittent headache was the predominant complaint, and after removal of the cyst or tumor from the thyroid the pain has been sometimes, but not always or not permanently cured. Three other cases in which symptoms like those of paroxysmal tachycardia were the most distressing, seem to have been more or less completely relieved by excision of the cystic or adenomatous area in the thyroid together with simultaneous ligation of its two superior vessels.

The irregular types of exophthalmic goitre can then be summarized in groups as follows:

(1) Cases in some unduly prolonged stage of an increasing or decreasing process which normally or most frequently or regularly begins with simple goitre and is followed by hypo, then by hyperthyroidism, then by exophthalmic goitre and then by a myxoedematoid state, and which may return to the normal in the reverse order from all but the last stage.

(2) Cases which represent variations from this process in that it never passes beyond the stage of hyperthyroidism, except to enter directly into the myxoedematoid state. This group is really a division of group 1.

(3) Cases of exophthalmic goitre in all particulars except that the symptoms supposed to be directly traceable to hyperthyroidism are slight compared to the degree of exophthalmos and to the evidences of disturbance in the central nervous system.

(4) Cases in which the evidences of hyperthyroidism are intermittent or slight, while symptoms referable to organs other than the thyroid are prominent only need mention, like the previous group, to make the thyroid prognosis guarded and the treatment conservative.

(5) Cases of so-called dysthyroidism which might properly be grouped in class 4.

#### SYMPTOMS OF HYPERTHYROIDISM INCLUDING THOSE OF EXOPHTHALMIC GOITRE.

A great variety of conditions and circumstances have been described as attending or preceding the inception and the advance from one stage into the next of all types of thyroid disease. By "conditions" are meant biochemical processes of a physiological or pathological nature, and by "circumstances" matters pertaining to the environment which conceivably or demonstrably intensifies these processes. When the history of each case is analyzed, the only influence which seems constant throughout all forms and all stages of these functional thyroid disturbances must be designated as fatigue. Its physiological effects upon different organs are to a large extent unknown, but there can be little doubt that it decreases the functional activity of one structure more than another in proportion to its intensity and the location of its maximum impact, and in the case of a gland like the thyroid, which experiments demonstrate to be closely related to the functions of many others, some balance seems to be impaired and there results first hypofunctionation and either atrophy immediately or hypertrophy, hypo—and then—hyper-functionation and atrophy later. The fatigue in cases in which it may not be manifest, can generally be assumed if not proved to be the result of activity of concealed or unknown biological processes either in the thyroid or its more closely dependent or associated organs.

This introduction to symptomatology anticipates the discussion of physiology, but is helpful in the interpretation of the history of the course of events which arises in any stage of thyroid disease. The only common denominator to which can be reduced all the apparent causative agencies in these disturbances is fatigue, and conversely the one constant remedial agency is rest.

By abnormality of the thyroid is meant an hypertrophy of the gland, or any otherwise symptomless goitre, or any disturbance which may culminate in myxoedema or exophthalmic goitre. During the inception of any thyroid abnormality, or during the intensification from one stage into the next of any hypo or hyperthyroid symptoms, there is always a history which can

only be construed as some unusual or excessive tax upon nutritional processes. A considerable amount of energy is expended, and this is ordinarily accompanied by more or less marked evidences of fatigue. An individual of the "nervous" type is placed in an environment which requires much mental alertness and generally a large amount of physical exertion. It may be a child in an uncongenial school, a trained nurse working on night duty, a teacher with a refractory class, a wife caring for a sick husband, or an athlete undergoing much competitive strain. Following these experiences, an enlargement of the thyroid occurs, and with it there is the lassitude of ordinary or physical fatigue. Its symptoms are now generally accepted as those of hypothyroidism, but only when in conjunction with them there is at least an appreciable hypertrophy of the gland. The evidences of this condition can then be enumerated as beginning with a history of some excessive expenditure of nervous or physical energy or both; later there are mental and muscular lassitude or asthenia, some headache, some insomnia or inability to sleep after midnight, defective functioning in the gastrointestinal tract with anorexia, fermentation and constipation, a subnormal temperature and a (systolic) blood pressure below 120 mm. of Hg. There are, also, dryness and pallor of the skin, but no constant anaemia. If the disturbance increases or progresses towards myxoedema, there is usually a loss of hair and a slow intensification of these vague signs which, at least at the outset, are physiological rather than pathological.

If, on the other hand, the disturbance advances in the other direction or towards hyperthyroidism and its later stage of exophthalmic goitre, a distinct alteration in this picture takes place, but always under the same or analogous conditions and circumstances which attend the development of the preceding stages of the disease. The history is the same at each period of intensification of the disturbance, and can only be construed as that of fatigue of the thyroid and of the organs with which it seems most closely associated. Following this initial period of hypothyroidism at a longer or shorter interval the headaches and the feeling of lassitude disappear and are succeeded by nervous irritability. The subject shows quick and jerky movements and, at the same time, presents manifest muscular weakness of which there may or may not be consciousness usually in the form of dyspnoea and cardiac palpitation on exertion. The wakefulness in the early morning hours of the initial hypothyroidism generally changes to an inability to obtain sleep before midnight or later, and is accompanied by a sensation of thumping heart. Many of the signs now generally accepted as those of hyperthyroidism can be traced to excessive activity in the sympathetic nervous system, and are usually enumerated as (1) any degree of tachycardia not otherwise explainable; (2) a moist rather

than a dry skin which flushes at the least emotion; (3) nervous irritability; and (4) a mental and physical asthenia which is peculiar to all forms of thyroid disease. If (5) there is added to the preceding signs a perceptible enlargement of the thyroid, for the normal gland cannot be seen or felt, the diagnosis should be considered as positive.

There are many cases of hyperthyroidism, however, in which the history is not that of fatigue or of environmental conditions which evidently force the expenditure of an excessive amount of energy. In these the disorder may begin insidiously during certain periods of life, such as mark the changes from childhood to youth or adolescence, or during a period of unusually rapid growth, or during pregnancy. It may first appear after some infectious disease, a traumatism, or fright, or other pronounced emotional disturbance, but under these conditions from what is known of the physiology of the thyroid as will be stated later, it seems fair to assume that the ultimate cause of its overactivity is the same. The fatigue, however, is of a biological or chemical rather than physical nature. It apparently originates from internal rather than external or environmental strains.

The history of the conditions and circumstances which precede and accompany the beginning of the process may show these variations in each stage of its advance, but they all seem to demand an amount of work on the part of the thyroid which is apparently more than it is naturally capable of performing. Normally, or regularly, the gland hypertrophies, then becomes fatigued and finally (if it does not atrophy) overacts and gives rise to the symptoms of hyperthyroidism, and later, but only in about 25 per cent of the cases, to those of exophthalmic goitre.

The symptomatology of the latter condition is unmistakable after it has developed, but should be recognized in the great majority of cases in the earlier stages and the advance prevented for typical exophthalmic goitre has a much more serious prognosis than simple hyperthyroidism. The protrusion of the eyes usually begins more or less slowly, and at first has the characteristic of a stare rather than prominence of the eyeball, and is then known as "Stellwag's sign." It is not a true exophthalmos but a retraction of the lids accompanied by an infrequent closure of them, which seem to be due in part to a decrease of the lachrymal secretion and in part to spasm of the muscles supplied by the third cranial or an "autonomic" nerve. Moebius sign, or the inability to converge the axis of the eyes; and von Graefe's sign, or the retraction of the upper lid, manifested by its inability to follow the eyeball in downward rotation, belong to the same phenomenon. Accompanying or following these peculiar disturbances there is generally some exophthalmos. The organ becomes more prominent than normally, and at the same time there is usually an increase in the more dis-



tinctive and characteristic signs of hyperthyroidism. For exophthalmos, though it regularly follows the disturbance and thus seems to be caused by it, as remarked before, only occurs in a minority of the cases of hyperthyroidism, and then often persists after all other signs of hyperthyroidism have disappeared. The vasomotor and nervous irritability; the exaggerated pulsation in the great cervical vessels and in the heart; the flushing and moisture of the skin are usually intensified with exophthalmos of increasing severity. The protrusion of the eyes rarely may become so pronounced as to force the greatest diameter of the globe beyond the lids, thus allowing them to close behind it. Less often because of the protrusion, the lids cannot be completely closed and the consequent loss of protection may result in inflammation and ulceration of the cornea and destruction of the eye.

The goitre, which is supposed to be one of the other characteristic signs of the disease, is extremely variable, but its vascularity and density are in general in direct proportion to the severity of the other symptoms. In long standing cases, and in those which have developed after a simple goitre or hyperthyroidism of considerable duration, the degenerative changes which have already occurred in the gland may hide the little which can be learned from palpation. As a rule, however, the more acute and severe the disease, the less seems to be the proportion of the colloid to the other elements in the gland, and this peculiarity is apparent in its external examination. Not infrequently the enlargement of the thyroid is inconspicuous or absent, and under these conditions the prognosis seems generally to be worse than where a considerable goitre is present. The disease, when accompanied by a small or absent goitre, seems more difficult to cure.

The tachycardia, which was mentioned first, in the enumeration of symptoms, and which originally was enumerated after the exophthalmos and goitre as the third in this triad of symptoms required to establish the diagnosis, may be merely an increased frequency of the heart beat without exaggeration in force, or the contractions may be enormously augmented in vigor in addition to being rapid. This abnormally violent cardiac action is very distressing, and is often felt as a pounding or throbbing, and is manifested by a noticeable precordial impulse which is sometimes so severe as to shake the bed on which the patient is lying. The nervous symptoms, which are most constant and characteristic, consist in a mental instability rather than alertness, in quick, jerky movements of the extremities, a constant restlessness or inability to remain quiet and a tremor or tremulousness in the extended fingers which is very similar to that noted in extreme physical fatigue. The muscular reflexes are regularly exaggerated. A few cases of exophthalmic goitre present symptoms which closely simulate disease of the medulla or spinal

cord or peripheral nerves, and it is difficult to determine whether the hyperthyroid condition is a cause or merely a complication of the other disturbances which may be of a trophic, a motor or sensory nature, or a combination of these. Those which I have observed occurred after the incidence of the thyroid disease, and if recovery took place these irregular nervous symptoms remained apparently unchanged.

#### PATHOLOGY OF HYPERTHYROIDISM OR EXOPHTHALMIC GOITRE.

The most constant and characteristic changes in this condition are to be found in the thyroid gland. In the earlier stages of the disturbance there is congestion with increased secretion of colloid in the alveoli. The colloid does not stain as deeply with eosin as the colloid in normal glands. A little later, or as the disturbance increases, so does the hyperdemia and the pale staining colloid. At the same time a hyperplasia of the cells takes place, and the alveoli, instead of being rounded, show papillary projections into their interior which consists of the basement membrane and on its surface the proliferating epithelium. In fatal or toxæmic cases the colloid then decreases in amount and the alveoli become filled with epithelial cells in various stages of disintegration. A cross section of such a gland appears solid and of a yellowish color. If the disturbance decreases or does not reach this degree of severity but continues longer, atrophy and fibrosis appear with hyaline changes in the stroma, sclerosis of vessels, hemorrhages and cyst formation. The cases which survives the stage of exophthalmic goitre and continue with some of these symptoms, but with a preponderance of others which are characteristic of myxoedema, show in the thyroid the small alveoli of the atrophic gland surrounded by much fibrous tissue, and in adjoining areas the papillomatous projections of epithelium on its basement membrane into other alveoli as in the gland of typical hyperthyroidism.

The whole histological picture of the gland in the hyperthyroid condition is in short that of increased functional activity, and the more severe the clinical symptoms the greater is the multiplication of the epithelial cells which appear to desquamate into the alveoli and thus alter the character of the colloid until in the severest types of the disease the colloid may entirely disappear. In other words, the histological evidence is all in favor of a more complex disturbance than a simple over production of the normal thyroid secretion. It is undoubtedly increased in quantity in the earlier or milder stages of the disease, but as it advances not only the total amount of thyroid secretion may decrease but its composition may change and that too with only an intensification of the same clinical manifestations. Of the other ductless glands which recent investigations show must have more or less connection with the hyperthyroid disturbance, the

thymus seems most important. It has been frequently found present or enlarged especially in the fatalities which may follow partial thyroidectomy. The persistence of this gland into adult life or its hypertrophy are not, however, constant accompaniments of hyperthyroidism. Lymphatic hyperplasia seems to have a similar inconstant though frequent relationship to the disease. Occasional changes have been reported in the hypophysis, parathyroids and adrenals, but their involvement in hyperthyroidism is as problematical as that of the thymus. Almost every organ in the body may show some alteration as an accompaniment or result of hyperthyroid disease. There are sometimes punctate hemorrhages in the medulla and in the superior cervical ganglion of the sympathetic. In chronic or long-standing cases degenerative lesions in the cardio-vascular system, liver, spleen and kidneys are the rule.

#### COMPLICATIONS.

These have been referred to in the outline of the course of the disease. The most common in my experience have been the disorders which follow a rising or high blood pressure. Hypertrophy and dilatation of the heart, or chronic nephritis are frequent in the chronic cases. A glycosuria or a psychosis are among the more dangerous of the complications. A colitis, with or without mucous, is sometimes very difficult to control. A susceptibility to infections, especially in the tonsils, is quite constant in hyperthyroidism. There is, also, considerable risk of intensification of the disturbance when operative interference must be undertaken upon other organs.

#### THE PHYSIOLOGY OF THE THYROID.

It is now generally accepted as proved that the thyroid only functionates through its secretion; that this secretion has a pronounced effect upon many organs and tissues, especially upon the central nervous system, upon the liver and digestive tract and upon the respiratory and genito-urinary systems. Oxidation processes are increased in the presence of an excess of thyroid activity or of thyroid feeding, and diminished when there is a deficiency of thyroid secretion. There also seems to be some direct connection between thyroid activity and the nitrogenous chemistry of the liver.

There is every reason to believe that the thyroid secretion has some quantitative relationship to the activities of these different organs and groups of organs, and that the activity of the thyroid therefore varies in amount according to the need for its secretion. The demand for thyroid secretion can only be expressed to the gland automatically by hormones in the circulation or through the nervous system. In man the only demonstrable nerve supply is from the cervical sympathetic, but in the horse, filaments to the gland have been traced from the superior and inferior laryngeals.

Recently Gudernatsch has demonstrated the

importance of the thyroid in developmental processes, and its close relationship with the thymus. By feeding tadpoles with thyroid he has caused them to metamorphose after three feedings into fully developed frogs at any stage of growth. By withholding thyroid and feeding thymus the metamorphosis can be entirely prevented. By feeding thyroid after thymus there can be induced an almost immediate metamorphosis. These curious changes help to explain the frequent occurrence of thyroid abnormalities during the period of puberty or adolescence, when it may be inferred from the frog experiments, that the thyroid and thymus must be extremely active. Countless experiments have been performed to determine the active ingredient of the thyroid secretion and an understanding of its more detailed physiology, but the findings have not as yet been accepted as proved except that apparently the thyroid epithelium by its biochemical processes pours into the alveoli some iodized protein which roughly varies in activity according to its iodine content. In hyperthyroidism, however, the quantity of iodine per gramme of gland substance which can be isolated from the pathological organ is less than normal, and the more severe the symptoms the smaller is this iodine content. Normally, the globulins are much more abundant than the nucleo-proteins, while in the hyperthyroid gland there exists an exactly reverse condition. Baumann isolated a substance he designated as thyroidin, which Oswald explained as derived from a globulin. Many experiments have practically proved that this is not the normal active ingredient of the secretion. I have recently been participating in a search for this substance, and we have found a body which seems to answer the requirements. Its properties can be briefly summarized as those of a powerful vaso-dilator, a stimulant of gastric secretion, a moderate diuretic and an antagonist of adrenalin in its action upon unstriated muscular fibres. It does not accelerate the pulse rate, and when administered to some cases suffering from hyperthyroidism it alleviates and does not intensify the nervous and cardiac symptoms. The results of these experiments are in preparation for publication. The general trend of all the experimental evidence strongly suggests that the glands of internal secretion act through the visceral nerves, which convey opposing influences to each organ. These nerves are distinguished from each other by the terms autonomous and sympathetic. The autonomous group includes the third, seventh, ninth, tenth and eleventh cranial nerves and the visceropelvic nerve which supplies the genitals and bladder. One or another member of the autonomous or sympathetic systems are always involved in thyroid disease, and there is a manifest disturbance in some obscure balance which normally seems to be maintained in the activation or inhibition of these nerves or their centres by the different ductless glands. Stimulation of the nerve supply

of the thyroid certainly decreases its iodine content. In our work it has been found impossible to isolate from the normal thyroid any substance which when injected intravenously will produce a noticeable acceleration of the pulse rate during the usual kymograph experiment. It has been attempted many times, but always with a negative result and, therefore, the reports in the literature of tachycardia and other hyperthyroid symptoms thus produced by thyroid derivatives are regarded with suspicion.

As the most apparent action of the thyroid lies in its stimulation of metabolism, or in the increase of chemical processes which have the effect of increasing nutrition, it is possible for the present to classify the thyroid as an organ concerned chiefly in the production and expenditure of energy, or more briefly as an organ of nutrition. This designation serves at least as a partial answer to the queries presented by the therapeutic problems when the gland is diseased. It also helps to explain the adjective "nervous," which is constantly used to indicate some of the most striking characteristics of patients afflicted with thyroid abnormalities. As ordinarily employed, the adjective "nervous" qualifies a personality or central nervous system which is more than usually sensitive to environment, and hence one which responds to all external and internal stimuli with more than the usual rapidity and thus requires the production and expenditure of more than the normal average amount of energy. If the thyroid, as seems true, can be classified with the organs of nutrition, it must be more or less constantly active to maintain a "nervous" person in health.

#### THE APPARENT CAUSE OF THYROID ABNORMALITIES.

When an abnormality of the thyroid advances from a less to a more severe stage, as described previously, there is always active functioning of one or more organs which are known to be in some degree dependent upon the thyroid. If there is more than the usual amount of activity in the nervous and vascular systems or in the liver, or organs of the digestive or genital tracts any pre-existing thyroid abnormality is regularly intensified, and when these activities abate or cease there is regularly a corresponding relief of the thyroid symptoms. This means that conditions or circumstances which require active metabolism and a considerable production and expenditure of energy intensify all thyroid abnormalities. That they cause these abnormalities to begin in only a comparatively few individuals seems due to variations in the vital capacity of different thyroids, or to the variable amounts of energy which different individuals expend under corresponding conditions and circumstances. For the "nervous" person seems peculiarly subject to either the development of any thyroid abnormality or after its development, to its intensification. All thyroid abnormalities, as stated

above, seem regularly to begin with simple hypertrophy, which is most reasonably interpreted as a multiplication of all the glandular elements to compensate for demands for a greater amount of thyroid secretion than the gland of natural size can supply. Activity in any organ is normally followed by a fatigue and, at least, partial cessation of function. In the case of the thyroid, the presumable compensatory hypertrophy which seems to be the first regular response to active functioning in the production and expenditure of energy, should be followed by fatigue and deficient functioning. This seems to be represented by the manifestations of hypothyroidism, or the second regular stage in thyroid disease. The other, or later stages are apparently only evidence of a more intense degree of the same fatigue, although the reasons which cause one thyroid to undergo colloid or cystic or fibrous degeneration and another to undergo the changes and give rise to the symptoms of either myxoedema or exophthalmic goitre, are entirely unknown. It seems possible, however, that the different directions in which thyroid abnormalities may advance are in some measure determined by the behavior of the presumably fatigued thyroid epithelium in its attempt to metabolize iodine. In myxoedema, the epithelium atrophies, and in hyperthyroid conditions it multiplies too rapidly and disintegrates, while the cystic goitres may involve a mechanical problem. Many of the latter forms of goitre evidently develop from more or less sudden hemorrhages into the substance of the gland. As clinically all types of hyperthyroidism are generally intensified by the administration of adrenalin or of the desiccated gland substance, and as the experimental evidence seems to link together the functions of the thyroid and adrenal glands, it is not impossible that the phenomena of hyperthyroidism involve some vicious circle in which the adrenals or cells of the chromaffin system participate and affect the biochemical activities of the thyroid epithelium.

If glandular fatigue is the ultimate or primary cause of all thyroid abnormalities, as seems probable, it then becomes possible to understand these disorders. When thyroid abnormalities appear in childhood their origin can be traced to the need of thyroid secretion to provide for rapid growth and development, especially if the brain is at the same time actively functioning. If one occur in a "shopgirl" or school teacher or trained nurse, it is presumably the result of excessive expenditure of energy by many organs, already taxed to their limit for maintaining the nutritional and metamorphic processes of young womanhood. Pregnancy, infectious diseases, traumatism and many other conditions or circumstances may thus originate or intensify thyroid disease. Endemic goitre need not be excepted, if only it can be regarded as beginning with a primary hypertrophy to compensate for excessive or unusual demands for thyroid secre-

tion on the part of the liver or digestive tract or some other organ which must be active to dispose of the ingested bacterial or colloidal poison apparently proved to be its ultimate cause.

#### TREATMENT.

All the clinical data make it seem reasonable that hyperthyroidism is an expression of fatigue in a gland which is compelled by automatic stimuli to functionate beyond its natural capacity. Therefore, rest and protection of the organ chiefly at fault, is the most logical treatment. The kind and degree of quietude must vary with each individual, and the severity of the disease and a purely medical or conservative treatment will succeed in a considerable proportion of the cases in the early stages, and even in a small number of those which have advanced as far as the beginning of the fourth stage or that of exophthalmic goitre.

Of the medicaments which have been found more or less efficacious for thyroid disease, iodine is generally regarded as most important. But in the great majority of hyperthyroid conditions it must be used with caution if at all, because after an initial period of improvement, the gland generally becomes denser and larger, and this change is accompanied by a subjective sensation of constriction. Then, if the iodine is continued, the disturbance may be greatly and often dangerously intensified.

From what is known of the histology and comparative iodine content of the normal and hyperthyroid gland it seems possible that the epithelium is unable because of fatigue or other more complicated biochemical defect, to properly retain and metabolize iodine, and the access of iodine in excess to the gland occasions more work on the part of its secretory cells than they can perform. As a result, they break down and disintegrate into an imperfect colloid product which may be superabundant or of deficient quality, or both.

The most valuable drugs are of the nerve sedative class, with the bromides and belladonna first in the list. Hydrobromid of quinine in five grain doses three or four times a day has a much greater reputation for amelioration of symptoms than it deserves. Digitalis or strophanthus may prove valuable in cases which do not show increased activity of the vagus by the pounding and manifestly increased vigor of the heart muscle. A heart which merely beats more rapidly than the normal without exaggeration of its contractions, may be steadied and slowed by digitalis and the patient ultimately much benefited. Organ feeding, in spite of our ignorance of its action, is certainly helpful if not curative in a small proportion of the cases, but seldom after the stage of hyperthyroidism has advanced into that of true exophthalmic goitre. It is suggestive of the possible variations in the nature or pathological physiology of the disease that the administration of thyroid by mouth has

not infrequently proved helpful. That is, the cause of the symptoms may not be due solely to an excess of the normal secretion, but to an excessive quantity of a product which has a defective quality, and that the quality may be improved by thyroid feeding with amelioration or cure of the disturbance is the legitimate inference to be drawn from many of the case reports. Thymus, pancreas, ovarian, pituitary and adrenal administration may benefit this or that isolated subject, but no distinctive symptoms or indications can be given for the particular organ therapy which may prove best. The antithyroid serum, in which I have been much interested, for the treatment of hyperthyroidism has proved curative for only about 20 per cent. of these cases, and of more or less help for some 50 per cent. additional. It is designed to inhibit the activity of the thyroid epithelium and to neutralize its product and is made by injecting sheep or rabbits with the combined nucleo-proteins and globulins obtained from human thyroid glands. A full description of this product and its usage can be found in the *Annals of Surgery* for December, 1909. This serum, however, is curative for only a small proportion of all the cases of hyperthyroidism, and there are so many difficulties in its preparation that it is impracticable for general use. Treatment by the X-ray applied to the neck has many advocates, and a small proportion of cures are reported. In a considerably larger number some amelioration of the condition may be obtained.

But for all who do not recover, or at least show some signs of improvement after a few weeks or months of conservative and medical treatment, especially if they have passed beyond the stage of simple hyperthyroidism into that of exophthalmic goitre, some form of surgical interference is at present regarded as the most satisfactory. The ligation of one or more of the thyroid vessels, or the excision of one-half or more of the gland yields about 50 per cent. of cures, and at least some 25 per cent. in addition of improvements with a mortality in experienced hands of between 1 per cent. and 10 per cent. The treatment by partial thyroidectomy will be discussed first. The ultimate mortality in medically treated or unrecognized cases from hyperthyroidism and its complications is variously estimated as between 5 per cent. and 10 per cent., or a much higher figure than is generally recognized, and it often means years of helpless invalidism or suffering.

The worst that can be said against the radical operation by removal of part of the gland is the considerable number of cases which it fails to cure, or which subsequently relapse. In addition, there are a few which are made worse by hemithyroidectomy. On the other hand, there is no doubt that at least half, and probably more of the suitable cases are quickly and permanently relieved. Some of those who are not cured or who relapse after partial thyroidectomy can be

benefited by subsequent removal of more of the gland. As yet, however, it seems impossible to accurately select the cases which are best suited for this form of treatment, but a few general rules of a negative nature can be formulated, which have been learned from an observation of many poor or bad post-operative results. Partial thyroidectomy is to be avoided as extremely dangerous in all cases, which in spite of the best medical care and of rest show a noticeable intensification of the symptoms of hyperthyroidism. The appearance or even the suggestion of a psychosis greatly increases the operative risk. Because of relapses and of failures to cure, partial thyroidectomy is to be avoided in patients who have not completed or have recently completed their maximum of growth and development; it is to be avoided in symmetrically enlarged glands, as these seem peculiarly prone to relapse even after considerable periods; it is to be avoided also in patients who generally show marked symptoms but have only small goitres, which means a gland not more than double the normal size; and in subjects of the very "nervous" type whose mentality is really that of a psychosis. Patients with marked exophthalmos bear any operation badly, and can seldom be more than moderately improved.

In doubtful cases some idea of the patient's ability to withstand the radical operation can be obtained with reasonable safety by the preliminary ligation under local anaesthesia of one, generally the superior, group of vessels. If this is borne easily and without any severe reaction, the removal of half the gland can be undertaken a week or two later with some security. If not, the ligation of other vessels is the only resource, but should not be attempted before the organism is again in static equilibrium, as a fatality is not uncommon even from this slight interference.

The condition, or what is here assumed to be the stage, of hyperthyroidism represented by exophthalmic goitre is seldom perfectly cured by any method of treatment, and in an attempt to improve upon these results I have practiced under local anaesthesia in two stages the ligation, and generally the division, of all four of the chief thyroid vessels in a considerable proportion of these cases, and there has occurred no resultant myxoedema or other disastrous result. This operation cuts off the chief part of both the vascular and nerve supply of the gland, and is designed to enforce rest upon a presumably fatigued organ which should be preserved and not sacrificed.

The superior vessels are reached by the usual transverse incision, and the tips of the lobes are generally to be included in the ligature and excised to ensure the division of the arteries. The lower arteries are to be reached through a vertical incision over the lower end of the posterior border of the sternomastoid. This approach exposes and passes in front of the phrenic nerve on the scalenus anticus. The inferior thy-

roid can then be felt and reached behind the internal jugular and common carotid. There seems to be little or no pain sense in these deeper parts of the neck.

The improvement after quadruple ligation of the thyroid blood supply, which must include the lower nerve supply and generally all or most of the upper, is not as rapid as after partial thyroidectomy, but the operation seems to be more certain in its results and less dangerous to life, and the patient has less subsequent risk of relapse even under the conditions and circumstances which seem to produce thyroid abnormalities. In the case of partial thyroidectomy these must be removed and for at least one year, otherwise a relapse is very probable. After quadruple ligation, however, hygienic measures are desirable, but their perfect observance is not essential for a cure. In two of my earlier cases the improvement became stationary, apparently because of the continuation of the unfavorable environment and exploration revealed a reformation of one or more arteries at the upper poles of the thyroid, probably from small collateral branches not secured at the primary operation. It is technically difficult to be sure of securing all the twigs given off from the superior thyroid, especially in a nervous subject under local anaesthesia. General anaesthesia seems to add materially to the risks, and is to be avoided according to the experiences of most operators. Hence, if any evidence of delay in recovery or relapse appear there should be no hesitation in advising secondary operation to reobliterate the probable new circulation at the upper poles of the gland. For this reason resection of the tips of the lobes seems to be better than simple division of the upper vessels. In judging of the results, the general condition is of more importance than separate symptoms.

Only one or two arteries should be tied at a sitting, and the operation should not be continued long enough to cause more than moderate fatigue.

To recapitulate, briefly, the indications for and the forms of treatment: Rest and good hygiene are essential for the cure of any thyroid disease; the antithyroid serum is the most efficacious of all conservative methods for many cases in the early stages of hyperthyroidism and for some of those in the exophthalmic group. In dosages of  $\frac{1}{2}$  to 1 c.c. it is harmless, but if its exhibition intensifies the symptoms it should be discontinued. When conservative methods fail after a month's trial, the ligation of one or more thyroid vessels should be practiced, or less frequently and only in selected cases, the excision of half the gland. Local anaesthesia is preferable to general narcosis. Ligation of one or more of the chief thyroid vessels will cure a large proportion of all types of hyperthyroidism. It is safer, but much slower in its effects than hemithyroidectomy. For exophthalmic goitre, or the most advanced and serious form of hyperthyroidism li-

gation of all four thyroid vessels seems to offer better hopes of cure than the more radical operation. Hemithyroidectomy seems indicated especially in the third or hyperthyroid stage of the disease rather than in the fourth or that of exophthalmic goitre, and in patients over twenty-five years of age who possess asymmetrical goitres of considerable and not small size.

About 25 per cent. of all cases of hyperthyroidism are only improved by hemithyroidectomy, and some 10 per cent of them are not benefitted at all or made worse and the general operative mortality is at least 5 per cent.

Surgery at the best is but a rough approach to the means which a better knowledge of physiology and of organ therapy should provide for the relief of these patients.

### THE EARLY DIAGNOSIS OF CONGENITAL SYPHILIS.\*

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ONE of the most interesting chapters in the pathology of infancy and at the same time one of the greatest importance and very far-reaching in its consequences is congenital lues, and perhaps nowhere in our work are we called upon to exercise greater diagnostic skill than in finding its early symptoms.

In other diseases the history of the patient will frequently be of inestimable aid to us; here we have only the history of the parents to rely upon, which is often either through ignorance or lack of personal observation, entirely negative, or which for obvious reasons is kept from us in its most essential points.

All this was again impressed upon me during the past winter when I had the good fortune to work at the Orphan Asylum of the City of Berlin, Germany, under Professor Finkelstein, to whom and to whose assistants I am greatly indebted for the use of the wonderful material of this institution and for many a valuable suggestion.

At an institution like an orphan asylum the histories of the little patients are usually lacking entirely or they are very meagre, whilst at the same time the clinical material comes from a stratum of society where syphilis is especially rampant.

In this paper I shall not tire you by giving you all the symptoms of congenital syphilis as you can easily read these up in any one of the numerous textbooks, nor will I give you the very obvious symptoms which will tell even the layman of the grave disorder affecting the infant, but I shall confine myself to those clinical symptoms which are often overlooked but which if found in the first days or weeks are of great diagnostic importance, to

find which, however, we have to employ some diagnostic skill and powers of careful observation.

Before going into these symptoms it will be desirable to touch briefly upon the modes of transmission of congenital syphilis as this will help us to understand some of the points to be brought out later.

The transmission of congenital syphilis may be either germinative or postconceptional.

For the germinal transmission we have three possibilities: 1. The mother may be well and the father has lues: spermatic transmission. 2. The mother has syphilis before conception and the father is well: ovular transmission. 3. Mother and father are both luetic; mixed transmission.

In postconceptional transmission of syphilis both the sperma and the ovum are well and therefore also the fetus, but the mother is infected during pregnancy and transmits the disease to the fetus through the placenta or at the time of parturition.

This last mode of transmission, which has been neglected so far, is quite important for us. During parturition the connection between the uterus and the placenta is loosened, blood-vessels are torn, and it is at this time when the invasion of the infantile body by the spirocheta pallida is easily accomplished; Rietschel thus explains the latency of the disease or the time of incubation in children who are born apparently well but who are infected. Thus only can we also explain those cases, which are by no means rare, in which the Wassermann reaction remains negative during the first weeks of life only to be found positive later on.

In syphilitic families the story runs usually thus: First we hear of repeated miscarriages, then of premature still-births in which not rarely a fetus sanguinolentus was born; then the birth of children who are living at birth but who are short-lived and show severe symptoms at the time of their birth; then come stronger children in whom the symptoms appear later; until finally children will be born to this family who are born well and in whom symptoms of the disease will never appear.

The gravity of infantile syphilis is thus shown to be the greater the more recent the infection of the parents and vice versa: the severer the disease in infants the earlier in life will it appear.

In this paper we are not interested in those children who are born with the stigmata of the disease but in those who are born apparently clean, but in whom we can find on careful examination changes in the different organs; also in those in whom the intrauterine course of the disease has run out and who are born apparently healthy so that we cannot find anything abnormal in any of the organs,

\* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

but who are weakly and do not thrive and who will later on have relapses of the disease; and finally in those children who are born healthy but who are infected and in whom the disease will appear sooner or later during the first weeks and months of life.

I will now attempt to give a systematic recital of those symptoms which we may find in congenital syphilis, but I am forced to state right here that some of these are not pathognomonic if taken by themselves, but as we usually find a number of these symptoms if we will only train ourselves to look for them, they will gain in that relative importance which they would not possess if they remained alone. I will also have to ask you to pardon any reiterations which may occur.

On the head we notice first of all the dilated veins in the scalp, especially the coronary vein, and next in frequency the vein at the bridge of the nose which latter is more evident when it accompanies a so-called saddle nose.

The saddle nose itself is a very characteristic sign of congenital lues, but not by itself alone as a greater or lesser degree of it is typical of some races, especially in Southern Europe, but only when it is found together with a chronic rhinitis and snuffles. In cases of congenital saddle nose we will also find the snuffles during the first week of life. The syphilitic coryza is a hypertrophic infiltration of the nasal mucous membrane, it causes a narrowing of the lumen of the nostrils to such a degree that inspiration and expiration through the nose is impeded and made audible at some distance, the so-called "Schniefen" of the Germans. Usually this rhinitis is a dry one, but we may also have a muco-purulent discharge, and the nostrils will be found covered by fresh secretion, crusts and scabs. The bloody coryza is, according to the investigations of Ludwig F. Meyer, due in many cases to an accidental infection with the Klebs-Loeffler bacillus and the syphilitic coryza only offers the predisposition to this infection. We have to remember this for therapeutic reasons.

In the eyes an optic neuritis will be found with relative frequency. Japha found this condition in 66 per cent of the infants with congenital lues and Heine in 83 per cent. This latter author states that in those syphilitic children who cry a great deal the ophthalmoscope will show the cause for this to be the pain caused by a latent papillitis. I think that in the future we will more frequently call upon our friends, the oculists, to help us out in these cases.

On the skin we find diffuse infiltrations which are not like the leucocyte infiltrations found in inflammatory conditions but are an epithelial inhibition. This will give the uppermost layers of the epidermis a glistening appearance and this swelling leads to a crack-

ing of the upper layers of the epidermis in extreme cases, thus causing the rhagades which are usually found on the lips but also on the eyelids, on the anus and at the roots of the nails. They are vertical to the border of the lips and radiating at the corners of the mouth. These rhagades must not be confined to the red of the lips but must go through into the surrounding epidermis, in order to be characteristic of congenital lues, as in this disease the condition is not one affecting the mucosa primarily, but it starts in the epidermis surrounding the mouth and thence reaches the mucosa. In cases in which this infiltration does not lead to the formation of rhagades it will produce a swelling paralleling the border of the lips, an apparent reduplication of these, the color of which is an opaque white.

This form of infiltration will be found on the trunk also from the lightest to the severest forms, such as pemphigus, but its most frequent location is on the palms of the hands, and still more frequently on the soles of the feet. Here we also observe the bluish discoloration which in some cases may cover the whole surface of the soles of the feet, whilst the glistening parchmentlike appearance is mostly in evidence on the outside of the sole and can be brought out best when we attempt to wrinkle the skin here.

It is of great importance to differentiate this infiltration caused by syphilis from the decubitus frequently found on the feet of infants, and here again especially on the heels, and which is often accompanied by losses of epidermis, and is caused by friction when the infant rubs its feet on the mattress, nor are the "plaques erosives" of French writers, which consist in centralized epithelial losses on the buttocks, of specific origin, and they will yield readily to a single application of tincture of iodine.

We further find this same kind of diffuse infiltration, as I have stated before, around the roots of the nails, but the paronychiæ, so frequently observed in syphilitic infants, are due to secondary pyogenic infections of these infiltrations and can therefore not properly be classed among the symptoms of congenital lues.

The color of the skin of these infants is a peculiar grey which we can easily recognize when we compare it with the rosy complexion of healthy infants. If we should hear that the infant has not suffered any digestive disturbance, then this color alone should make us look for other symptoms of the disease.

Should we not see the patient until after the sixth week of life, or should we have overlooked other early symptoms, then our attention will be attracted by a complexion of the skin, first of the cheeks, but later of the rest of the body, which has been aptly compared by Trousseau with the color of "café au lait"

or with the color of the index and second fingers of habitual cigarette smokers. To mistake this peculiar color for icterus neonatarum is impossible if we examine the cornea, and we should remember that icterus neonatarum has long disappeared by this time; any icterus which should still be present after the sixth week of life, however, could be due to only one of the following causes: either congenital malformation of the bile-passages, or habitual familiar icterus, icterus acholuricus hæmolyticus, sepsis or lues congenita.

One symptom which might perhaps not be called an early one, but which I want to mention here, is the macular exanthena which appears first on the soles of the feet and which consists in brownish-purple, lentil-sized, deep-seated spots which are better seen from a distance, owing to the glistening condition of the rest of the sole, later this exanthena spreads over the whole body.

A papular eruption, consisting of follicular swellings due to a circumscribed infiltration the size of the head of an ordinary pin, are found first on the forehead and later on the chin. In children affected with exudative diathesis the water-logged condition of the body may make this papular rash appear like an impetigo with severe serous exudations.

At the umbilicus we see that in some cases a thickening and redness remains after the falling off of the cord, and this will develop into a deep sharp-edged, dirty-looking ulceration, which yields readily to anti-syphilitic treatment, leaving a peculiar pigmentation of the skin around the navel.

The frequent umbilical hemorrhages after the separation of the cord in syphilitic infants may be explained by an infiltration and thickening of the umbilical blood vessels which will prevent their contraction, or they may be due to a hemophilic condition which is frequently observed in luetic children.

In the bones the X-ray will show in the long ones an indistinct epiphyseal line, but the apparatus is not always at hand nor is it needed, as other symptoms will call our attention to the diseased condition of the bones. First in importance amongst these is the swelling of the cubital glands. These are not as easy to find as the textbooks would make us think, and we must frequently feel along the whole sulcus bicipitalis internus before we can find the small nodules which vary in size from that of a millet seed to the size of a French pea. This enlargement of the cubital gland indicates osteochondritis in those regions from which the cubital glands derive their lymphatics, namely the arm and forearm at the elbow.

The two neighboring nerves, the ulnar and radial, may also be affected by pressure from this osteochondritis; this causes the child considerable pain, and as a reflex action it will inactivate the limb, thus simulating a paralysis,

the so-called pseudoparalysis of Parrot. At examination the healthy infant will, when awake, make incoördinate movements with its limbs, or if asleep it will assume a position similar to the one it has assumed in utero with the legs drawn up and the hands before the face; the child with Parrot will keep the affected limb in a flacid condition. After two or three days we will frequently find the other arm likewise affected.

Though this pseudoparalysis is most frequently observed in the elbows, we may also see it in the shoulders or legs. In the shoulders we must differentiate it from a true paralysis due to injury of the brachial plexus during parturition.

The syphilitic periostitis may cause a swelling of the bone the same as other varieties of periostitis, but in this disease the swelling is usually found on the first phalanges of the fingers and also the toes, it is bottle-shaped and on close inspection it will be found on all the fingers or toes of one limb, though it is most pronounced in one finger. Tubercular spina ventosa is spindle-shaped and affects as a rule one digit only, nor is it confined to the first phalanx.

The periostitis of congenital syphilis affects also the bones of the skull, the frontal and parietal tuberosities will be prominent from this thus making the glabella appear to be sunken in, this condition will give the head the shape called caput natiforme or caput olympicum.

Of the nervous symptoms, the sudden, apparently causeless, crying spells, especially at night, which are so characteristic of young infants suffering from congenital syphilis, have been explained above to be due in many, if not all, cases to a papillitis.

One symptom which should always make us consider the diagnosis of congenital lues are eclamptic seizures in infants under three months of age and in older infants at the breast, especially if they do not yield to anti-spasmodic sedatives and to phosphorous in oleum morrhuæ and when we can exclude epilepsy. Hydrocephalus is usually caused by congenital lues and its frequency in prematurely born infants may be thus explained. An enlargement of the skull is not a *sine qua non* in hydrocephalus, and I have seen quite a number of cases of hydrocephalus in microcephalo; to recognize these cases Strassburger's transillumination is of inestimable value.

Of the internal organs an enlarged spleen is one of the most constant and most important symptoms of congenital syphilis, though it may also be found in tuberculosis and in rickets, is always to be looked for, and if we find at the same time the liver enlarged, sharp-edged and hard this makes the diagnosis sure.

A rare but very characteristic early symp-



tom is considerable amounts of albumen and casts in the urine without a general condition, which would be expected in seemingly so grave a condition of the kidneys, and a prompt disappearance of these symptoms upon the administration of potassium iodide.

Another infrequent symptom, but one which seems to be not sufficiently known, is a hoarseness in syphilitic infants, the *vox rauca*, without any pathologic findings in the pharynx nor in the larynx and which is not due to any narrowing of the air passages as it is not accompanied by a drawing in of the lower ribs which, if found, would indicate an insufficient aeration of the lungs.

Still another early symptom which is quite rare is an infiltration of the testis, a true orchitis, whilst tubercular infection causes an epididymitis.

In some cases the newborn will have attacks of asphyxia, beginning on the first or second day of life. These attacks will last for about half an hour and will recur every day or every second day until death, which is the usual outcome of this condition; this is due to the so-called pneumonia alba, a syphilitic infiltration of the lung tissue, which causes a disseminated atelectasis.

Finally I must mention those cases, and they are by no means infrequent, of infants who do not thrive at the breast with the best of care, regular and sufficient feedings, who have not had any digestive disturbances and in whom we cannot find, even with the most thorough examination a single symptom nor change in any organ which would give us any enlightenment. These are cases of latent syphilis or perhaps a parasymphilis in families where at least one of the parents has had syphilis a long time before the birth of this child, though the only proof which we can adduce is *ex juvantibus*, as these infants will begin to thrive without any other change in their management as soon as we place them on some antisymphilitic medication. With the luetin or the pallidin reaction I have had no personal experience. The Wassermann reaction is generally considered next to the finding of the spirochaeta pallida as the surest diagnostic sign in all forms of syphilis, and this is without any doubt true when the reaction is positive, but during the first weeks or even months in children with congenital syphilis it may fail us and I therefore want to report in conclusion one of the numerous interesting cases which I have observed at the Berlin Orphan Asylum, which will show of how little value the Wassermann reaction may be in the early diagnosis of congenital syphilis, and which proves again that even the finest of laboratory methods can never take the place of careful clinical examination and observation.

J. R., born March 18, 1913, had cracked lips

about six or seven weeks after birth and was given some yellow powders, of which he took 60 in all. He was then received into the orphan asylum on July 5th. Here the following conditions were found: Moderately well developed boy, weight 3,820 g. with good turgor of the skin, size of large fontanel 3 by 2 cm., glands in nape of neck and also cubital glands enlarged; spleen, liver, lungs and heart appear to be normal; abdomen considerably extended; saddle-nose; skin of cheeks infiltrated; veins of scalp dilated; urine slightly turbid; albumen; Esbach one-half per thousand, in the sediment numerous granular casts.

On July 6th the Wassermann reaction was reported to be negative, on the 14th the child developed coryza and the Wassermann reaction was reported to be doubtful, and on the 21st it was again reported to be negative, in the meantime the albumen had increased to one per thousand, the child was loosing in weight and appeared toxic and it was placed on 24 hours of tea and then on small quantities of food; on the 24th an otitis media was observed on the right side; on the 26th the coryza became bloody but no Klebs-Löffler bacilli were found in the secretion at repeated examinations.

On August 5th otitis media was found in the left ear as well; on August 29th the Wassermann was at last reported to be positive and on this date the spleen was noted to be enlarged.

I shall not tire you by reciting the whole further history of this case, but I shall only state that the Wassermann reaction was again reported positive on October 22nd.

On November 29th and also on the 5th and 12th of December the child received 0.08 gm. of neosalvarsan into the coronary vein without any change in its general condition, but with the result that on the 5th of January of this year the Wassermann reaction was again reported to be negative and the child now weighed 6,200 g., though it was still suffering from its severe nephritis.

#### PITFALLS AND MISTAKES IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.\*

By M. ZIGLER, M.D.,  
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THE list of cases about to be reported are taken from the records of my private and hospital patients. Although the number of cases reported is small, even these few will show the liability to err in the diagnosis and treatment of syphilis, and the dire results upon the tissues of the body resultant from such errors. In some of these cases the

\* Read before the Medical Society of the County of the Bronx, November 18, 1914.

ravages of the disease were so severe that they have practically wrecked the individual's life because of actual injury to the vital organs or because resultant suffering and illness necessitated numerous and protracted absences from work.

The object of this paper is to bring out firstly, the fact that a certain number of patients never knew that they had been infected with syphilis; secondly, that there is a still larger group who really forget that they had been infected; thirdly, another class still greater in number than the preceding, who, although they knew that they had been infected, are not conscious of the fact that their past syphilis has any relation to present manifestations; and, lastly, we come to the most important division, a class of patients who, "try to live down their syphilis" and wilfully deceive the physician as to their past. For these various reasons, and because some of the manifestations of syphilis are at times so vague and uncharacteristic, if I may use this term, the pitfalls in diagnosis and the mistakes in treatment of syphilis are very much more frequent than we suppose.

A good example is the following: M. D., age 37, came to the Post Graduate Hospital April 1, 1914, with the following past history—Fourteen years ago the patient had an initial lesion followed by mucous patches of the mouth and throat. Under local and general anti-specific treatment his symptoms disappeared in about four months. Nevertheless, he continued taking oral medication for two full years. He remained symptom free for four years. Then he noticed what he called lumps, glands, commencing behind the ears and extending downward on both sides of the neck. These glands were diagnosed as tubercular, although they were entirely out of the region where tubercular glands usually occur. The patient had neither a family nor a personal history of tuberculosis. At no time could tubercle bacilli be demonstrated in his sputum although numerous specimens were examined. The patient received a number of tuberculin injections without improvement. Some of these glands finally broke down. He was then subjected to three operations for curettage of these glands without improvement in his symptoms. At the fourth operation the glands were excised, after which he made an uneventful recovery.

One year later, that is about eight years ago, noticed in the mid-line of the forehead a swelling which gradually grew to about the size of a walnut. This mass gradually became soft and broke down. This tumefaction\* was at no time accompanied by pain. The discharge was slight in amount and thin in consistency. This condition continued for one year, during which time he received only local washes. His case was not diagnosed as

specific with the result that this mass, which was probably a gummatous osteitis and periostitis, caused a great loss of bony tissue and a markedly depressed scar in the table of the frontal bone. At the end of another year, that is about seven years ago, he noticed a new lump formation on the back of the head in the region of the tempero occipital articulation. This mass grew to about the same size as the previously described gumma and also broke down with a corresponding loss of bony tissue. It also was only treated with a local wash. After one year's duration it healed spontaneously. The medical attendant had no suspicions of the proper diagnosis.

One year later, that is about five years ago, the patient commenced to complain of pain in the right hip. The pain was very severe at night. This was also diagnosed as tuberculosis. The patient was Röntegen rayed but the plates were all negative. After suffering for some time he entered a hospital. Right lower extremity was put at rest in a cast. At the end of four weeks he was discharged as permanently cured.

Present history dates back about five months to December, 1913, at which time he began to complain of lancinating pain in both arms, pain shooting from the shoulders to the tips of the fingers. Pain was decidedly worse at night, in fact, so severe that he tossed about in bed the entire night. When daylight came he was exhausted from loss of sleep. Four weeks after the onset of pain in the upper extremity, he began to complain of shooting pains in both knees, which were also decidedly worse at night. Said that when night came on the pains in his legs were so severe that he would wind his legs around his neck in order to obtain some ease. During the day he was able to attend to his trade as an iron worker. Now for the first time, Wassermann tests were taken. Wassermann of the blood plus 4. Wassermann of the cerebro spinal fluid was negative.

Because of the lightning-like pains in the arms and legs, the gradual diminution of power in the lower extremities and the marked loss of weight and strength, the medical attendant suspected a cerebrospinal lesion, and accordingly gave a poor prognosis and apparently no treatment.

Physical examination of the head shows a large depressed circular scar about two inches long and one inch wide, situated in the middle of the frontal bone. Depression extends into the bone about one-third of an inch. Further back in the tempero occipital region there is another very similar scar about the same size and shape.

The neck shows linear scars extending from behind the ears downward along the anterior border of the sterno cleido mastoid to the level of the thyroid cartilage. The legs show

large circular pigmentations and scars from previous syphilitic ulceration. The right tibia shows a distinct oval elongated swelling three inches long and one inch wide (syphilitic periostitis).

Neurological examinations for Argyle Robinson, Remberg and Westphal signs was negative.

*Treatment.*—April 1, 1914, he was started on potassium iodide, grains ten, three times a day, each dose increased one grain until thirty-five grains three times a day were taken. The pain in the arms and legs was markedly diminished after the first dose of iodides. This improvement has been progressive, so that at present the patient has neither a pain nor an ache. Sleeps through the whole night. Eats ravenously. After the first week received bichloride of mercury internally.

*Conclusions.*—The above reported case impresses one with the great number of diagnostic mistakes possible in a single case of syphilis. In the first place the syphilitic glands in the neck were repeatedly operated upon for tubercular glands, resulting in great suffering to the patient, enormous loss of time and the most hideous looking scars. A more careful history and a more careful study of the chain of glands involved would have demonstrated that these glands were not in the sight of the usual tubercular chain. Secondly, the involvement of the bones of the skull lasting for two years occasioned untold suffering and resulted in permanent scars, with a great loss of tissue. All of which could have been avoided had the proper diagnosis been made and early anti-specific treatment been instituted. Thirdly, the patient was obliged to suffer with his hip for a long time because his condition was diagnosed as tuberculous. His hip pains were undoubtedly syphilitic and would have responded to anti-luetic treatment without his being obliged to lie in a hospital for a number of weeks. Fourthly, because of lightning-like pains in the arms and legs, some loss of motor power in the latter, some general weakness, some diminution of vision, the diagnosis of taboparesis was made but with no attempt at treatment.

Before we can say that certain syphilitic lesions are curable or incurable, it is important to try the therapeutic test, in addition to knowing whether the blood or cerebrospinal fluid is positive or negative. The prognosis of this case was immediately changed when the Wassermann of the cerebrospinal fluid was found negative and when it was noticed that the symptoms of the arms and legs were mainly due to pressure of a syphilitic osteoperiostitis on the brain and not due to a nerve lesion of the cerebrospinal axis. This case again proves how ever watchful we must be in the diagnosis of syphilis.

CASE 2. Is that of a private patient. E. J. H., male, age 23 years, single, born in United States.

*Past History.*—March, 1913, developed chancroids, complicated by left sided inguinal adonitis. He was operated upon for the latter and made an uneventful recovery.

*Present History.*—Patient came to my office October 10, 1913, with the history that he had noticed a small hard sore on the penis on the first day of September, 1913. This sore gradually extended until it almost completely encircled the organ. The patient came to the office to get rid of his sore without an operation. He had been advised that a circumcision would be necessary in order to cure him of his sore. The patient had no idea as to the nature of his disease.

*Local Examination Disclosed the Following.*—A typical initial sclerosis on the dorsal surface of the penis extending around the left side to the anterior surface. This annular lesion was almost as hard as cartilage and absolutely painless. In the left groin there was situated a hard walnut-sized inguinal gland.

*General Examination.*—The throat was slightly congested. The patient had a generalized macula eruption.

*Treatment.*—On October 10, 1913, he was started on sal. Hg. by injection which he received every fifth day, also calomel ung. to the sore.

October 25, 1913.—Fifteen days after his first treatment the initial sclerosis was about one-sixth its original size.

November 11, 1913.—Which date was about one month after treatment was begun, the remains of the original lesion could barely be palpated.

*Conclusions.*—This case is reported to emphasize the fact that initial lesions can be rapidly dissipated by large injections of mercury and that ordinarily there is no occasion for the performance of circumcision in the case of chancre of the penis.

Fournier has collected the statistics of syphilographers who have performed either circumcision or excision of the chancre for aborting syphilis but was not convinced of the efficacy of either procedure.

*Final Conclusion.*—There was therefore no occasion for performing circumcision in the case above reported, especially as the secondaries of syphilis were already present at the time the operation was contemplated.

CASE No. 3.—F. S. Male, aged 43 years, born in the United States, resident of New Jersey.

*Past History.*—On September 1, 1912, developed a sore (chancre) on the penis. The lesion healed rapidly under self medication by means of washes, etc. He gave no further thought to the lesion. Not even six weeks

later, that is, about the middle of November, when he developed pain in both shoulders followed by rapid involvement of other joints until finally most of the articulations in the body were affected.

He consulted a number of physicians who treated him from November 15, 1912 to January 31, 1913 (a period of ten weeks), for rheumatism, without any improvement in the symptoms. At this time, January 31, 1913, consulted another physician who correctly made the diagnosis of syphilis and promptly started the patient on mixed treatment by mouth. The patient almost immediately began to experience some relief from his symptoms.

Improvement in symptoms continued for several months, with oral medications, but after that time no further benefit was noticed by the patient. Wherefore, at the end of nine months of mouth treatment he decided to obtain more intensive medication. Particularly as his doctor found that he could not take mercury pills for a longer period than three or four weeks, after which time his gums became affected and his digestion impaired, so that medication had to be discontinued.

*Present History.*—On September 3, 1913, the patient came to my office because of severe pain in the region of the occiput, the muscles of the back of the neck, the fingers and toes, and considerable soreness in the chest (under the sternum).

He also complained of considerable tenderness on pressure over the breast bone. In addition he complained of difficulty in arising from a sitting posture, because of pain and stiffness in the neck and back. Says that in order to arise from a sitting position he is obliged to put forward both of his hands, grasp some object and thus gradually lift himself. For several minutes after rising, he cannot stand erect. Suffers with headaches and dizziness. At times feels as if he "would topple over." Thinks that his memory is failing. Complains of a sore throat, low down (in the larynx). Weighed 205 pounds when first taken sick, now weighs 160 pounds.

Physical examination of the patient was practically negative except that he had a very sallow complexion, a heavily coated blackish-looking tongue and some tenderness over the sternum.

*Treatment.*—September 3, 1913, oral medication was discontinued. He received a hypodermic of sal. Hg. grains one and one-half and a mouth wash.

September 9th, patient still complains of considerable pain in the back of his neck but says there has been a marked diminution of pain in his fingers and toes. Rises from a sitting posture with less difficulty. No longer feels any stiffness in the back and can stand up straight as soon as he rises. Also feels

much better generally. Received another hypodermic of sal. Hg. grains 1.

From September 3, 1913, to this date, June 11, 1914, he has received weekly injections of salicylate of mercury in doses varying from three-quarters of a grain to two grains. Also received two intravenous injections of neosalvarsan. After each one of the first dozen of mercurial injections the pains in the joints were aggravated and would remain thus for two or three days. Then the pains would gradually subside so that the patient would feel most comfortable on the day that he was to receive his injection and most miserable during the two days following the same. This reaction may well be used as a diagnostic and prognostic sign. Given a doubtful case of arthritis in which you administer hypodermics of mercury, and find that for several days after each injection the pains in the joints are aggravated, only to be much improved just before the next injection, you can make a tentative diagnosis of syphilis. Prognosis in such cases is usually very good as far as a symptomatic cure of the arthritis syphilitica is concerned.

After the first dozen injections the patient no longer had any reactions and not only felt much improved during the three days period prior to the injection but felt well all week. This improvement has continued up to date so that at present, the patient feels absolutely well. He is nevertheless continuing with his treatment. Weight 175 pounds, a gain of fifteen pounds in nine months.

*Conclusion.*—This patient's condition was allowed to go unrecognized for a period of two and one-half months. During this time, his gastro-intestinal tract was thoroughly upset by huge doses of anti-rheumatic medicines, while his syphilis was allowed to go unrecognized.

After the diagnosis of syphilis was made, he was put on oral medication which medication, while having some influence on his disease, did by no means control it. It is the rule that oral mercurial medication has very little influence on the severe forms of syphilis, particularly, if continued for some time. If mercurials are given by mouth over any lengthy period they will impair digestion, which will in turn, lower the resistance of the individual, so that the lesions of syphilis will become worse in spite of treatment. As soon as this physician noticed that the symptoms were not improving he increased his mercurial dosage with the result that the patient developed gastro-enteritis. So that not only was his ability to fight his disease reduced but he was obliged to suffer with inanition from his gastro-enteric inflammation. It is for this reason that it is much better to give courses of mercury by deep injections, thereby reducing the liability to gastro-intestinal inflam-

mation and giving your mercurial at a definite time in a definite dosage. In case oral medication sets up an enteritis you do not know how much mercury is being taken up by the system and how much excreted in the stools.

CASE NO. 4. Mrs. X. Referred to my office during the early part of 1911 because of a lesion on the clitoris.

*History.*—Her doctor first saw the ulceration five weeks previously, at which time the sore was about the size of a small pea. He cauterized the lesion with fuming nitric acid, at first daily, later on, every other day. He referred the patient to me for diagnosis and to ascertain the cause of its tendency to spread.

Examination disclosed on the clitoris a hard circular gangrenous ulceration about the size of a quarter. The center contained a blackish-looking slough. The edges were very hard and infiltrated. Bi-lateral hard markedly enlarged inguinal glands were present.

*Treatment.*—The lesion was healed in the course of three weeks by equal parts of steared zinc and calomel dusting powder.

*Diagnosis.*—Because of the hard sore combined with enormously enlarged hard inguinal glands, a tentative diagnosis of primary lues was made, which diagnosis was confirmed one week later when secondaries of syphilis appeared.

*Conclusions.*—It is a great mistake to cauterize an initial lesion for the following reasons: Firstly, because an initial lesion is made more malignant, chronic and indolent; secondly, because the cauterization causes the sore to spread. The tendency to spread is particularly well marked if the lesion is cauterized more than once. The explanation of this is very simple when you consider the pathology of syphilis. The initial lesion is essentially a round cell infiltration; if you cauterize this chancre you destroy a certain amount of tissue, if you recauterize you destroy still more. So that as this area in the center of the round cell infiltration is already cut off from its blood supply you simply add additional trauma without giving the sore a chance to heal. Furthermore, by cauterization you are very apt to cause infiltration and induration in a lesion that is soft, so that in this manner you may mask your diagnosis in that you may cause infiltration in a chancroid and then think you are dealing with a chancre. Of course, there are exceptions to the rule above mentioned. In the case of a sore on the penis, whether hard or soft, where the lesion is spreading so rapidly as to threaten the organ, you are justified in cauterization. Where the lesion is a chancre, it is best to use a mercurial caustic, such as the solution acid nitrate of mercury.

*Final Conclusions.*—The above series of mis-

takes in treatment and diagnosis are pointed out not in a spirit of criticism but rather to show how frequently such errors are made and as a warning that we should ever be on our guard against the many pitfalls of this hidden and almost mysterious disease which can make its appearance in such divers ways and partake of some of the characteristic symptoms of a large number of other conditions and diseases.

#### DYSMENORRHŒA.\*

By ROSALIE SLAUGHTER MORTON, M.D.,  
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PAIN at the menstrual period is associated with such a variety of conditions, both systematic and local, the subject of dysmenorrhœa opens for discussion a wide medical and surgical field; many hours would be occupied in thoughtfully considering the various aspects of this far-reaching subject.

In the brief time assigned to me this morning, I will limit myself to the causes and effects of congestion, adding a few suggestions on treatment, and shall look forward to your discussion to develop much of value regarding this phase of the subject.

In reviewing the literature on dysmenorrhœa, I have been surprised to see how many gynecologists consider more or less pain at the period normal.

Emmet, for instance, in 1880 said, "Every woman, even in health will experience at least some degree of discomfort at the menstrual period; that she should be absolutely free from pain and suffer no inconvenience at this time is an abnormal condition." Martin, of the Universitäts-Frauenklinik in Greifswald, in his book published so recently as 1912, says, "We have no reason to designate as dysmenorrhœa those disturbances which most women experience at the time of menstruation—the pains in the back, the discomfort, the feeling of heaviness in the abdomen, a continuous desire to urinate, and so forth, these are attendant symptoms of menstruation which are borne by most women prudently as associated with this process.

"To my mind it would be quite as scientific to say we have no reason to designate as indigestion, pain in the stomach after taking food. The monthly hyperæmia of the uterus is as physiological and should be as free from pain as the post prandial gastric hyperæmia, and I believe this opinion will be borne out by the majority of American gynecologists. It is, however, of some interest to determine why men of such eminence should have taken the opposite view and I think the reason is not far to seek, but with your permission I will refer to that later.

Each tissue in the body, to perform its func-

\* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

tion normally, must receive the proper amount and quality of blood. Most of the tissues of the body receive only the blood necessary for the performance of their work and there is less need for variation in every other organ than in the uterus. The rigidity of the pelvic walls, the necessity of the large supply of blood to the lower extremities passing through the pelvis, as well as that needed for its contents, renders it absolutely necessary that the circulation should be unimpeded. Our attention is so centered on the ovarian, uterine and vaginal blood vessels, it is easy to overlook the importance of the circulation in the right and left common iliac veins, in the anterior and posterior divisions of the external and internal iliacs on each side of the pelvis, in the ilio lumbars, internal pudics, and in the sciatics; as well as in the obturators, middle and lateral sacrals, superior middle and inferior hæmorrhoidals and vesicle veins and the corresponding arteries.

The readiness with which congestion occurs is increased by the upright position, by the fact that much of the return flow of blood from, and through the pelvis is carried by venæ comites with no valves, and the veins form many plexi in the loose connective tissue around the uterus, vagina, rectum and bladder. When one considers there are thirty-six named arteries in the pelvis, beside many branches, receiving a quick impact of blood with every heart beat, and that constipation alone may interfere with the entire venous return, it is not surprising that some degree of congestion is frequent.

The baffling discrepancy in opinions regarding whether displacements cause dysmenorrhœa is probably due to the fact that a retroverted uterus may cause no discomfort either during or between periods, if the circulation is not interfered with, and a slight misplacement may give marked symptoms if accompanied with congestion of the uterus or surrounding tissues.

The tortuosity of the uterine and ovarian arteries and the multiplicity of their branches, to allow for the rapidity increasing size of the fundus in pregnancy, and the abundant supply of blood to the fœtus, render flexions of the corpus more serious than versions, as they more readily produce congestion, and as the vessels are more direct on the posterior surface, ante-flexion is more commonly associated with pain. The collapsible walls of the veins are more compressible than the arteries and if the flexion is so acute as to interfere with the circuitous route of the venous blood through the anterior uterine plexus, stasis occurs.

The intimate relation of the terminal filaments of spinal and sympathetic nerves to the muscle fibres, and arterioles of the uterus and adnexa, and the numerous ramifications of these nerves account for the sense of discomfort, without definite pain, which accompanies the premenstrual congestion in hypersensitive persons. The location of the sacral plexus and the relation

of the anterior crural, and anterior division of the obturator nerves, to the ovaries, make back-ache and shooting pains down the legs logical symptoms. The normal period comes on without the patient being conscious of it until it makes its appearance, if the uterus is well suspended by the utero-sacral ligaments, and balanced by the broad and round ligaments, the bladder not over full and the rectum empty as it normally is, except a few minutes before defecation—there is abundant room for the uterus even with the physiological enlargement which exists at this time. The gradual flow of blood through an unobstructed os and vagina is attended with no pain. If there is inflammation and its attendant congestion of endometrium, tubes and ovaries, it is a matter for diagnosis and treatment. The idea that dysmenorrhœa will right itself is an absurdity in all cases except those due to undeveloped organs, and even if the uterus is small dysmenorrhœa should not be diagnosed as due to lack of development until the patient has been thoroughly examined, to ascertain the relation of her monthly pain to abnormal conditions which may exist in her respiratory, circulatory, digestive, renal and nervous systems. The direct bearing of these, as well as normal and properly adjusted bones and muscles is frequently overlooked in an undersized, poorly nourished individual. Our increasing methods of, and opportunities for, thorough diagnosis, make it possible, when we explain conditions to our patients and get their intelligent and interested co-operation, to make all cases of dysmenorrhœa curable.

I have frequently found cases which had persisted for years, markedly improve in a month, and soon recover, by systematic regulation of diet, indoor and outdoor exercise, periods of rest, hours of sleep, drinking water, neutral baths, deep breathing, and strict attention to minor details, each in itself trivial, but together determining whether the patient should be a semi-invalid or an efficient person.

It is opposed to common sense to allow a woman to suffer for approximately one-third of her most useful years, for many patients are incapacitated for competent work ten days out of the month, if one counts the time they are below par before, and after, the acute pain. Nèurasthenia is a more frequent result than cause of dysmenorrhœa.

The increasing economic value of women's time and industry during the past twenty years, leads an increasing number of patients to seek relief from dysmenorrhœa, while formerly this class of cases patiently bore the ills they considered feminine flesh, unhappily, heir to. A wider knowledge of personal hygiene associated with the outdoor activities of women have greatly raised the individual standard of health. The percentage of dysmenorrhœa depends largely upon the physical development of the individual. Dr. Howard Kelly's statistics give 70 per cent of college women free from dysmenorrhœa. I have found among poorly nourished, over-worked,

factory and store employees only 7 per cent with no pain at periods.

The relation of leucorrhœa to congestion is obvious; if the organs contain an excess of venous blood filled with carbon dioxide, tissue tone is lowered and the mucus membrane degenerates; the glands which it contains are stimulated to excessive work by over supply of blood; this produces an excess secretion and leucorrhœa results, which soon causes excoriation of the os. The menstrual congestion adds just sufficient tension to the chronically inflamed tissue to produce dysmenorrhœa. The leucorrhœal discharge alters the normal secretion of the vagina and produces vaginitis, the attendant congestion is increased at the period by increase in circulation and by the irritation of blood, mucus and corpuscular detritus flowing over the inflamed surface. This type of dysmenorrhœa quickly yields to warm medicated douches, and ichthyol glycerine tampons, especially if the latter are made of a soft wool which does not swell.

The tight corsets generally worn in 1880 not only interfered with the pelvic circulation by crowding down the intestines but by pressure on the liver assisted portal congestion which was encouraged by sedentary habits. The dresses of the period show the women who wore them had round shoulders and contracted chests which interfered with aeration of the blood, and with the general circulation to such an extent that neurasthenia from anæmia was prevalent. Women became so used to slight ill-health, due to the effect upon every organ of incorrect posture and lack of exercise, that the observations regarding them must differ from ours, made from the more robust type of our time. The danger in the style of dress worn by a limited number of women of today is the tendency to constrict the hips, for as soon as the distribution of blood in the lower extremities is interfered with there is a compensatory engorgement of the arteries in the pelvis. A number of cases directly due to this have come under my care in the last two years. The relation of the health of American women to their present-day activities, tennis, golf, riding, rowing, swimming, walking, etc., is a tempting line of digression and would account to a large extent for the different conclusions drawn by Professor Martin, whose observations are based on German hausfrau.

Unilateral or bilateral ovarian dysmenorrhœa is frequent in a patient in whom one or both ovaries are small, somewhat sclerotic or cystic, and it is not uncommon for the patient to complain of a throbbing pain, probably due to the ovarian arteries coming off directly from the aorta, and the resistance offered by the thickened ovarian tissue raising the blood pressure. The relation of blood pressure to dysmenorrhœa has many interesting variations which would come within the scope of a paper dealing with systemic conditions in relation to gynecology.

Pain in the ovaries and uterus at the same time

suggest that both are suffering from a common cause. This is usually obstructed circulation, the pain increasing in ratio to the amount of premenstrual congestion and the amount of resistance offered. In the infantile type of uterus, the blood vessels are too small to receive the increased amount of blood necessary to establish the menstrual hyperæmia and there is consequent engorgement of contributory vessels. One of the frequent causes of pelvic congestion I have found to be loss of tone of abdominal, diaphragmatic and intestinal muscles. Present methods of studying intestinal stasis by repeated X-Ray examinations after a bismuth meal bring to light a variety of conditions bearing directly on dysmenorrhœa which will make accurate diagnosis and relief possible in cases hitherto dismissed as neurasthenic. Ptosis of the stomach to the pelvic brim, complete prolapse of the transverse colon, acute angulation of the hepatic or splenic flexure, or both, and dilated rectum are active causes of Pelvic Congestion. Pressure of a misplaced or wandering cæcum or complete prolapse of the sigmoid into the fossa between the uterus and the bladder or into Douglas' pouche, is not uncommon. The amount of interference with circulation in the left Fallopian tube and ovary when they are embedded in adhesions binding them to the sigmoid as in a case upon which I recently operated, freeing these adhesions and thereby curing a dysmenorrhœa which had necessitated the use of opiates for seven years; since the onset of the menstrual period the patient suffered abdominal and pelvic pain, nausea and anorexia for two days before each period, as well as during the flow. I am indebted to Dr. Judson Quimby for lending me a plate showing a sigmoid looping across the lower abdomen and passing behind the right ovary, becoming adherent to the latter by the spreading of a malignant growth.

Several young patients have come under my care with a history of habitual constipation, of never having been vigorous, but no definite pain until the beginning of menstruation. On examination the uterus and adnexa have been found normal but a prolapsed sigmoid with slight intussusception and consequent obstruction of the rectum have been found; on correcting this the dysmenorrhœa has disappeared. Congestion of the uterine lymphatics has a direct relation to dysmenorrhœa. The close network surrounding the uterus, tubes and ovaries must have free drainage into the deep inguinal glands, or nutrition is interfered with. The clotting quality of blood is lessened if there is excessive admixture of lymphoid substance, and hemorrhagic conditions arise; if, on the other hand, the lymph supply is reduced dysmenorrhœa arises from the coagulation of the menstrual flow, creating a foreign body which excites colicky uterine pain. Obstructive dysmenorrhœa is often associated with mild infections owing to the development of purulent leucorrhœa due to bacteriological infection of retained alkaline secretion of the uterus. If the

lymphatic circulation is impeded so that it cannot do its share in overcoming the resulting toxemia, the condition becomes chronic and spreads to the tubes.

Sterility is so often associated with a history of pain from the onset of the periods that it is not fair to those who later have a duty, and the right, to become mothers to deprive them of this, by not even trying to find the cause of the dysmenorrhœa. Education regarding the normal period being painless will lead to patients seeking relief before serious conditions arise. No disease starts with its climax and the faulty "let alone" teaching of centuries has led to all minor conditions being ignored until they have become serious.

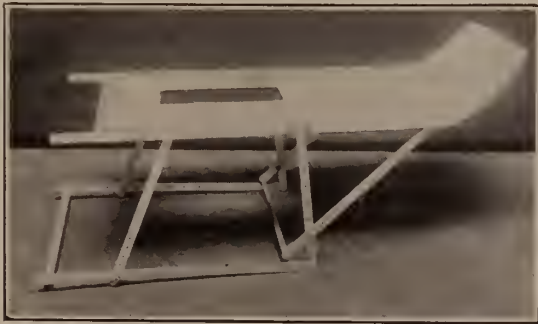


FIG. 1, shows the table in its first position. A folded blanket laid upon this is held in place by passing it through the slit at the end of the table. The patient sits with her feet resting on the crossbar and holds the projecting handles as the table tilts backward, it having been previously adjusted to the height desired for treatment, and the up-curving end of the table holds a pillow in position when the table is tilted backward.

As congestion forms so large a part of the various causes of dysmenorrhœa and relief by dilation of the surface capillaries is so commonly sought by the use of whisky, gin, or other alcoholics, I have turned my attention to the use of some method of relieving the stasis by postural treatment, and, while the well-known knee-chest position is useful in many cases, I have found instructing a patient to put a blanket over an up-turned chair in order that she might lie with the



FIG. 2, table tilted to its extreme position. It can also be adjusted to any lower pitch. The foot-rest is also adjustable.

hips elevated and the muscles generally relaxed is better, as patients can remain in this position for a longer time, do not have to twist the neck

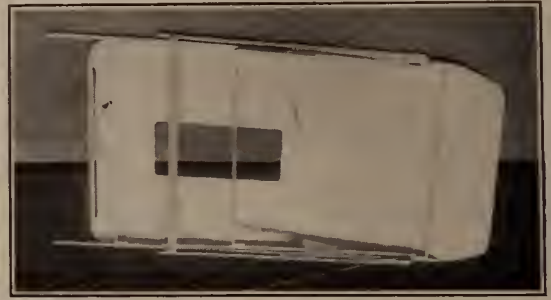


FIG. 3, Douche and Ptoxis treatment. Table folded with the support flat against the top. It takes up a minimum amount of room when not in use.

and use no energy or muscular contraction to maintain their balance; but as chairs vary greatly in their strength and adaptability to this, I had a table made for postural treatment for the relief of pelvic and abdominal ptosis, venous and lymphatic congestion. The force of gravity also assists in correcting retroflexion, antiflexion and prolapse of the uterus, and by relieving the strain on the ligaments helps them to recover tone. The table can be adjusted to the height of the individual and the amount of inclination desirable in the treatment of the case.

I have also found it valuable for giving douches to patients who have an inflamed vaginal vault or congested cervix for in the horizontal position, when these pathological conditions exist the mucus membrane of the upper fourth of the vagina, and that reflected on the cervix, are not reached.

The table is practically for home use, as it is

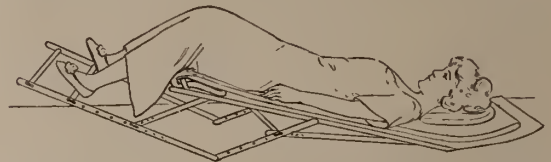


FIG. 4, patient lying comfortably relaxed upon the table.

inexpensive, can be folded up and put aside when not in use. The drainage of the pelvis is much improved by instructing the patient to practice deep breathing while lying in the Trendelenburg position ten to twenty minutes two or three times a day. Inhaling slowly forces the diaphragm gradually down; exhaling quickly produces a sudden relaxation which relieves the abdominal and pelvic contents of pressure. I have also obtained good results by advising patients to develop the muscles in the round ligaments by throwing back the shoulders, taking a half breath, fixing the chest quickly, contracting and drawing up the abdominal muscles. This lifts the uterus. These mechanical aids are only adjuncts to the hydrosopic use of Boro Glyceride tampons and such other local and systemic measures as may be indicated.



## FRACTURES OF THE NECK OF THE FEMUR: ITS TREATMENT.\*

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**I**NCREASED efficiency is being sought and secured in every department of the industrial world. Preventative medicine is everywhere extending its field of work with marked success. The study of occupational diseases has resulted in great economic saving of workmen, especially those engaged in handling lead and phosphorus. Brilliant advances have been made in the surgical treatment of appendicitis, cholecystitis and gastric and duodenal ulcers. Contrast all this with the unfortunate treatment of fractures where the average results are but little better than a generation ago. In no class of injury, except fracture, is the prognosis so uncertain as to the amount and duration of disability, the length of convalescence and the ultimate functional result.

Among all fractures, the most disabling is that of fracture of the neck of the femur. At first one can hardly appreciate how startling these results are unless he has carefully studied various series of statistics and wherever the usually accepted principles of practice are employed, the long side splints with Buck's Extension, there the average results are uniformly unsatisfactory. Of value in this connection are the conditions existing in sixteen cases of fracture of the hip observed by Scudder many years after the accident. In only two cases or 12 per cent could it be said that the leg was functionally useful.

The writer studied the records of 112 cases of fractures of the neck of the femur treated in Bellevue Hospital between 1906 and 1907. Only fifteen cases, or 13 per cent, recovered good function.

The British Fracture Committee reported ninety-one cases, of which eighty-seven were over fifteen years of age. Of these adults only twenty, or 23 per cent, recovered good function (Brit. Med. Jour., 1912, p. 1505).

Thus the best results in fractures of the neck are much poorer than the average results, 42 per cent in all groups of fractures of the femur.

To what are these startling results due? There exists the general belief that definite treatment toward securing restoration of form and function is hazardous and of little avail. Authorities have stated that "our prognosis in cases of fracture of the neck must always be unfavorable," and also "if he escapes with his life he has to be contented with loss of function, loss of symmetry and equipoise, and he is often obliged to go about permanently crippled." One acute observer has written that "it may well be that treatment is perfunctory because the prognosis is

bad, and the prognosis is bad because the treatment is ineffective."

Fracture of the neck is usually considered to be a fracture of old age and, therefore, it is associated with an unfavorable prognosis. Undoubtedly this anticipated failure has unfavorably influenced the usual methods of treatment. That it does not occur entirely in old age is shown by the following statistics:

Nine cases occurred in patients under 30 years of age.

Twenty-one cases occurred in patients between 30 and 50 years of age.

Twenty-two cases occurred in patients between 50 and 60 years of age.

Forty-two cases occurred in patients between 60 and 70 years of age.

Fifteen cases occurred in patients over 70 years of age.

In three cases the age was not given.

On investigating these unexpected results, two most important facts have been observed. First, there has been an inefficient reduction of the deformity or no satisfactory attempt at fixation; second, there have been too early attempts at walking.

In consulting the records of various hospitals, which were dictated at various times by different surgeons, a considerable variation of nomenclature was found. Some adhered to the old terms of intra-capsular and extra-capsular, others included both varieties of fractures under the single term of "fracture of neck"; still others used Kocher's classification of fracture subcapitalis and fractura intertrochanterica. The terms of intracapsular are unscientific, inaccurate and misleading because the majority of cases do not fall distinctly into either group since they are "mixed." Intracapsular cases were supposed to include all those in which the lines of fracture were entirely within the capsule; extra-capsular, all those which were entirely without the capsule. The majority of fracture lines are oblique or diagonal and not strictly transverse, consequently a fracture may be intracapsular in front and extracapsular behind, inasmuch as the capsule is so placed that it includes more of the joint in front and below than above and behind. Kocher's terms, while more strictly anatomical, have not gained popular usage. Stimson's classification has been followed, *i. e.*, fracture through the neck or subcapital, and fractures at the base of the neck. The neck is apt to break in one of two places, at its junction with the head, or at the base, at its attachment to the trochanter.

**DIAGNOSIS:** *Outward Rotation* is generally present. If a line be drawn through the axis of the limb passing through the anterior superior spine and the tip of the great toe, the part of the limb lying to the outer side of this axis will be much heavier than the inner part. If now the normal support of the limb, the femoral neck be broken, the limb will naturally rotate outward by its own weight. When impaction occurs it

\* Dr. Walker's paper on Fractures of the Neck of the Femur has been republished because the important words "abduction" and "adduction" were used interchangeably, notwithstanding the fact that the galley proof sent to the printer had been correctly edited. The error destroyed the value of this admirable paper, and we deem it but justice to the author to adopt this method of rectifying the mistake.

will also be rotated outward, for the impaction takes place usually at the posterior part of the neck and the trochanter is twisted backward.

*Shortening* is the most important symptom and depends upon the lessening of the angle between the neck and the shaft, which approaches more to a right angle, upon impaction of the fragments or their displacement longitudinally. After the fracture occurs the strong muscles which are inserted about the trochanter contract and draw the trochanter upward, inward and backward toward the crest of the ilium, until checked by the resistance of the untorn part of the capsule or by the abutment of the lesser trochanter against the inner fragment.

If impaction occurs, the lower portion of the neck may be forced into the spongiosa of the head; under these conditions shortening is not more than one inch. If the impaction is separated and the capsule yields, the shortening may become increased to several inches. This is observed in cases where movements have been made, and the weight of the body has been borne upon the fracture.

Exact measurement is frequently difficult because it is so hard to keep both legs at the same angle with the pelvis; they should be parallel or equally abducted from the median line. The measurement should be taken from the anterior superior spine to the most prominent point on the internal malleolus.

Bryant's method is to be used. It consists in dropping a perpendicular from the anterior superior spine and measuring the distance from this line to the top of the trochanter and then comparing this with the other side. The top of the great trochanter lies at or a little below Nelaton's line, and about opposite to the symphysis pubis. Nelaton's line is determined by stretching a tape from the anterior superior spine of the ilium to the tuberosity of the ischium.

Crepitus is frequently elicited during the gentle rotation of the leg with slight flexion. False motion is also frequent.

Radiograms should always be employed when possible, as they establish the details of the impaction more accurately than can be secured by any other means of evidence.

**TREATMENT:** The aim of the treatment should be the restoration of the normal function of the hip joint, and in order to accomplish this result the normal anatomical form must first be restored. The same principles which are necessary to produce success in the treatment of fractures in other situations must also be employed here. In another group of cases, which is fortunately small, the age and weakness of the patient are so marked that only expectant or palliative treatment should be considered. It is not difficult for the surgeon to decide upon the conservative method in these cases. It is desired to suggest the plaster bandage method for the larger number of younger and more robust pa-

tients for whom our results would indicate it to be desirable and applicable.

As the chief object is to endeavor to obtain the complete or approximate restitution of the normal anatomical figuration of the bone, so it becomes necessary to overcome the displacements of the fragments. The proximal fragment being beyond our control we must endeavor to bring the peripheral fragment—the peripheral part of the femoral neck into alignment with the prolonged axis of the central fragment. The upper end of the distal fragment, the trochanter major is drawn upward by the action of the gluteals and rectus femoris in front; by the biceps, semitendinosus and semimembranosus behind; it thus becomes deviated upward, inward and backward (producing the shortening; the outward rotation is due to the mechanical weight of the leg, a result of gravity), hence it must be conducted forward, downward and outward. To accomplish this, two forces are necessary, longitudinal and lateral traction. These have been used by Maxwell and Bardenheuer, and especially developed by Bardenheuer and Whitman.

The larger number of fractures occur at the base of the neck and in most of these cases impaction is also present, immediately after the injury. In many cases, however, this impaction is broken up and the fragments are separated when the patient is brought to the hospital—especially Bellevue. In unimpacted cases there has been no difference of opinion regarding the attempt to replace the fragments in their normal anatomical position. But in those cases in which impaction remains there is a decided variance of opinion. It seems best after observing the good results obtained by Bardenheuer, Ochsner, Maxwell, Whitman and others to recommend that the deformity be reduced (while the patient is under the anæsthetic) by carefully separating and unlocking the fragments, not by tearing them asunder violently and harshly, but by carefully opening them as one would open a hinge.

Treatment should begin at once after the injury, before the muscles have time to contract, and so displace the fragments. Each day's delay renders the reposition and reduction of the deformity so much more difficult, and also permits the fragments to rub against each other, causing an increasing irritation which results in the production of an hypertrophic callus. Exact early reposition of the fragments decreases the amount of callus and is indispensable for union in unimpacted fractures.

**METHOD:** The following procedure is employed. A careful examination is made of the patient's condition in order to determine the wisdom of giving an anæsthetic for a period of twenty minutes, this time being required for the application of the plaster bandage. As soon as the anæsthetic permits complete relaxation, a gentle examination is made of the fracture and frequently crepitus is found in those patients in whom impaction is thought to be present.

The patient is lifted to a pelvic support, preferably furnished with a perineal bar for counter pressure, the extended limbs being supported by assistants. The assistant holding the uninjured limb abducts it to the normal limit in order that it may serve as a guide, and incidentally to fix the pelvis. The injured limb is first flexed and rotated sufficiently to disengage soft parts that may be interposed between the fragments. It is then completely extended, and the assistant, by direct manual traction, overcomes the shortening, as demonstrated by measurement and by the relation of the trochanter to Nelaton's line, at the same time correcting the outward rotation. Still maintaining steady traction, he then abducts the limb to correspond with its fellow, the operator meanwhile supporting the joint and lifting the thigh upward. The pelvis should now be level and the extended limbs in exact correspondence in every particular. A plaster spica is then applied from the axilla to the toes. This should be carefully adjusted about the pelvis and trochanter. It should completely cover the buttock and be heavily reinforced beneath the joint and thigh, that it may be unyielding to pressure and therefore effective as a posterior splint to hold the limb at its proper plane.

**ADVANTAGES:** The prolonged plaster bandage maintains complete immobilization during the period of repair, overcoming the shortening and adduction. The abduction prolonged during four to six weeks is of marked importance in aiding the future ability to walk without impairment or limitation of motion. It further protects the patient from much unnecessary suffering on movement, and renders him far more comfortable.

**DIFFICULTIES:** It is difficult to apply the plaster bandage because it is necessary to have experienced assistants with sufficient strength to overcome the contractions of the strong muscles during the entire period required to apply the bandage, and it requires unusual steadiness and concentration of attention on the part of the operator, and each of the three assistants to maintain the exact relation of the fragments, for unless the bandage be applied accurately it will be either inefficient to correct the displacement or uncomfortable for the patient.

It is hard to make the proper abduction and at the same time to prevent shortening. It is very important to make abduction complete as it exercises direct traction upon the capsule tense in front and below. As it supports the sides of the fragments it tends to force them into alignment, so it assists in correcting the malposition of the inner fragment and brings the two into contact.

In impacted fractures, passive abduction affords the most practical method of reducing the deformity without danger of widely separating the fragments.

In many of the unimproved patients it is found that their inability to walk without discomfort is due to a restriction of abduction.

Adduction is marked and added an apparent to an actual shortening of the limb. It is very important to overcome the shortening which is present in the majority of patients, for this shortening is responsible for most of their later disability.

There are a large number of patients who are taken care of by their family physicians and whom the surgeon does not see until several weeks after the accident. In these cases the deformity has not been satisfactorily reduced and the shortening still persists; therefore, even under anæsthesia, much greater force is required to adjust the fragments.

It has been found very unsatisfactory to depend for traction upon the manual efforts of our assistants, and frequently their combined strength has failed to reduce the fragments. I am sure that those surgeons who have had an extended experience all thoroughly appreciate the necessity of having powerful traction which can at any moment be applied or discontinued; it must be sufficiently flexible in its working to permit at first a small amount of traction, which later can be easily increased when more traction is required. During the last two years I have been using Dr. Lemon's extension apparatus and have found this of the greatest possible assistance in those cases where there existed marked shortening, with rigidity of the muscles and the adjacent tissues. The leg is held steadily and the plaster cast can be easily applied without releasing the extension. It can also be maintained until the cast becomes solid. This has given me great comfort in relieving my anxiety lest the fragments become displaced when the patient is first moved from the table after the reduction.

As we remember that the second cause of the bad results was due to the fact that too early attempts at walking were permitted, so we should never forget that in these fractures the joint is often affected by traumatic arthritis and that there is an unusually great strain upon the slender femoral neck. When the patient begins to walk, whenever possible, he should wear a Taylor hip splint or some simple modification of it to relieve the neck of the femur from the strain of carrying the whole weight of the body.

In a treatment designed to restore function, as distinct from the capacity to support weight, the protection of the weakened part during the period of repair and reconstruction is almost as important as the preliminary reduction of deformity. No direct pressure should be permitted for many months nor until voluntary control has been regained and until passive movements are relatively free and painless.

I desire to present the following histories, feeling that illustrative cases will encourage other members of our State Society to undertake the above method.

**RESULTS:** Case 1.—Male, forty-five years old, moderately stout, alcoholic. Four days before admission he fell upon the left hip. A diagnosis

of fracture at the base of the femoral neck was made. There was  $\frac{3}{4}$ -inch shortening, and outward rotation existed. He was given an anæsthetic, and crepitus was then easily found. A plaster bandage including the foot was applied. At the end of four weeks he was allowed out of bed on crutches. At the end of six weeks the plaster bandage was removed below the knee. At the end of eight weeks the entire bandage was removed and he went about on crutches, without any pain. At the end of three months he was doing well, still using crutches. At the end of four months he had abandoned crutches and was using only a cane. At the end of six months he was at work. At the end of twelve months he had but  $\frac{1}{4}$ -inch shortening, and was able to do his regular work as a mechanic. Sixteen months after the accident he is without pain or discomfort and has but  $\frac{1}{4}$ -inch shortening; flexion and abduction are practically normal.

Case 2.—Male, 65 years of age, large frame, well nourished. Four days before admission he slipped and fell, striking his right hip. He was unable to move and was treated for a bruise for three days. He was transferred to Bellevue, where a diagnosis of fracture at the base of femoral neck was made; there existed marked outward rotation and  $1\frac{1}{4}$  inches shortening. Crepitus was present and fullness in Scarpa's triangle. Under an anæsthetic a plaster bandage was applied. At the end of eight weeks the entire bandage was removed, but he was not permitted to bear any weight upon the injured hip until the fourth month. At the end of six months he used a cane only at times and was able to do work as a janitor. At the end of nine months he was in good condition, he could walk well without pain, go up and down stairs, and there was less than  $\frac{1}{2}$  inch of shortening; flexion and abduction were normal.

Case 3.—Female, forty-seven years of age, large and fleshy. Two days before admission slipped and fell striking upon the right hip. She could not stand when lifted up. A diagnosis of fracture at the base of femoral neck was made. There were present outward rotation, fullness in Scarpa's triangle, crepitus, and  $\frac{1}{2}$ -inch shortening. Under an anæsthetic a plaster spica bandage was applied. At the end of five weeks the bandage was removed below the knee. At the end of eight weeks it was entirely removed and she was about on crutches. During the sixth month she used only a cane. At the ninth month she was able to do her normal housework without discomfort. She has no perceptible shortening; flexion and abduction are normal.

Case 4.—Male, seventeen years of age. Two days before admission he fell down an elevator shaft, a distance of five stories. He was unconscious, but recovered within the next twenty-four hours. There was found to be a fracture at the base of femoral neck. Outward rotation and  $1\frac{1}{4}$ -inches shortening were present. Under an anæsthetic a plaster spica bandage was applied.

At the end of three weeks the bandage was removed below the knee. At the end of four weeks he was out of bed using crutches. At the end of eight weeks he was using a cane. At the end of four months he was working on a farm. At the end of six months he was doing his regular work as a mechanic. At the end of one year there is but  $\frac{1}{4}$ -inch shortening, he walks with only a very slight limp, abduction and flexion are normal, and at no time has he any pain or discomfort.

The favorable results exhibited by these four patients at the end of six, nine and twelve months; the absence of deformity, pain and discomfort; the freedom of motion and their ability to resume their regular work, are undoubtedly due to the method of treatment employed.

In no case has it appeared that the patient was harmed by the application of the bandage. In no case did it produce pressure sloughs and require to be removed. In but a few early cases did it need to be cut away at the edges on account of injury to the skin. The plaster bandages were applied with great care and patience on the part of the House Staff, to whose interest and effort much of the comfort of the patients was due. In a majority of the cases the plaster bandage was not applied until several days after the injury. In many cases the patients had been under treatment in some other hospital before being transferred to Bellevue. Although the long side splints were in use, all of these patients complained of pain whenever any movement was made (in changing the sheets, in changing from one position to another, in lifting him up to use the bedpan, etc.), the side splint did not give sufficient support to prevent movement between the fragments.

However, after the plaster bandage was applied the patients found that they could move about without pain and could help themselves in many ways. The nurses appreciated the many advantages which the patients gained through the comfort of a well applied plaster bandage. In general the patients were far more comfortable than others with similar fractures but under the routine treatment with the long side splint and Buck's extension. From the hospital standpoint this method of treatment is less exacting in that the patients being more comfortable they do not require so much time and attention from the nurses.

#### CONCLUSIONS:

1. Fracture of the neck of the femur occurs under fifty years of age more frequently than was formerly believed.
2. Any injury to the hip followed by disability should suggest the possibility of a fracture of the neck, and requires an expert examination aided by an X-ray photograph.
3. Reduction of the deformity with complete immobilization of the fracture during the period of repair by means of a plaster spica bandage is advised in all suitable cases.

4. This is to be followed by early gymnastic movements, active rather than passive.

5. All weight bearing upon the fracture is to be avoided for from four to six months; in some cases even longer.

### CYSTITIS COLLI.\*

By HENRY DAWSON FURNISS, M.D., F.A.C.S.,  
NEW YORK CITY.

**A**BOUT thirty per cent. of the cases seen in the gynecological department complain of some disturbance of urination, either alone or in association with diseases of the genital organs, and of these fully ninety per cent. have cystitis colli or trigonitis.

The history of patients with this condition is very characteristic; they complain of much diurnal frequency of urination, voiding every half to two hours. There is usually no pain, but unless the bladder is promptly emptied there is a sense of distension and the desire to void becomes imperative. In contrast to the diurnal frequency it is generally noted that these patients seldom have to get up at night to void. The amount of urine excreted in twenty-four hours, is generally in excess of normal, of low specific gravity, free of albumin, pus and blood, but often contains a quantity of bladder epithelia.

The condition is usually of long duration, and often dates back to childhood, the patients remembering that they were frequently scolded for their inability to hold urine, or that when at school they were given special consideration on this account. They are particularly susceptible to weather changes, and exposure to cold, or getting wet intensifies the condition.

Until recent years a patient with the history above detailed with the negative urinary findings, was considered neurotic or the possessor of an irritable bladder.

Bacteriological examination shows either a sterile urine, or one containing the colon bacillus, but sometimes other organisms are found. To detect the gonococcus by cultural methods special media have to be used. In every case of frequency of urination in young women a careful search should be made by microscopical examination and guinea pig inoculation for tubercle bacilli.

In examining these patients we find that the bladder is usually less tolerant than normal to the distention of the fluid used in cystoscopy.

Different degrees of involvement of the trigonum are found, from a simple hyperaemia to a severe inflammatory infiltration, limited either to the anterior portion of, or involving the whole trigonum. I believe that in many cases there are inflammatory changes in the bladder wall itself that are not to be seen with the cystoscope. The most troublesome and rebellious form that we encounter is one where there is a metaplastic

condition of the epithelial cells. This appears as a whitish area extending backward from the urethral orifice toward the ureters, with irregular but sharply defined edges. This picture is quite characteristic and once seen is never forgotten. In quite a number of cases of trigonitis there is also an involvement of the urethra, generally the anterior two-thirds, and failure to recognize and treat this often accounts for lack of success. Authorities define an inflammatory and non-inflammatory form, ascribing as the cause of the latter congestion due to displacement of the uterus, cystocele, pressure of growths, etc. I consider these only as predisposing and contributing causes, and think that all are of infectious origin. Obtaining a sterile urine does not eliminate infection as the origin of the trouble, as the organisms which were at first present may have disappeared.

In my opinion there are two principal types, the gonorrhoeal and the colon bacillus. In one instance we found the para-typhoid bacillus, and that brings up the thought that some may be post-paratyphoidal or post-typhoidal. It has struck me that the gonorrhoeal cases show more evidences of active inflammatory changes and are more amenable to treatment than the colon bacillus form, and that in the colon bacillus cases we have that peculiar metaplasia of the trigonal epithelia mentioned above.

In a number of cases there is also a pyelitis which perpetuates the trigonal infection. Whenever a pyelitis is present the patient should be X-rayed for stone, as frequently calculi tend to keep up the renal infection.

Treatment: All conditions which cause congestion of the genito-urinary organs should receive their proper treatment. If there is a pyelitis, that must be treated and remedied before we can hope to obtain results in treatment of the trigonum.

Bladder irrigations give some relief, generally in proportion to the irritation and active hyperaemia induced. Urotropin has not been of much benefit and is surpassed in symptomatic relief by Tinc. of Hyocyamus and Potassium citrate.

Our best results have been obtained by the local application, through a Kelly endoscope, of three to six or even ten per cent. silver nitrate, to the urethra and trigonum; these treatments being given every five to seven days. This should be done with the patient in the knee-chest posture, for in this way we can get a good view of the trigonum and the urethra, and are not troubled by the presence of urine. With the patient on the back the urine is constantly flooding the end of the endoscope, necessitating frequent mopping and neutralizing the silver nitrate when it is applied. In hypersensitive patients the urethra had best be anaesthetized with five per cent. Alypin or three per cent. Eucaine beforehand. The gonorrhoeal cases improve rapidly, but the ones with the metaplastic epithelial cells

\* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.





## Correspondence

DR. JOHN COWELL MACEVITT,

*Editor, NEW YORK STATE JOURNAL OF MEDICINE.*

itself, and shock the world with descriptions of what they see. Others, again, gather together information respecting crime, and make the benevolent look grave by their disclosures. Whereupon, in horror at these revelations, men keep thoughtlessly assuming that the evils have lately become greater, when in reality it is they who have become more observant of them. If few complaints have hitherto been heard about crime, and ignorance, and misery, it is not that in times past these were less widely spread, for the contrary is the fact; but it is that our forefathers thought little about them and said little about them. Overlooking which circumstance, and forgetting that social evils have been undergoing a gradual amelioration, many entertain a needless alarm lest fearful consequences should ensue, if these evils are not immediately remedied, and a visionary hope that immediate remedy of them is possible.

One would have thought that less excuse for meddling existed now than ever. Now that so much has been effected; now that the laws of health are beginning to be generally studied; now that people are reforming their habits of living; now that the use of baths is spreading; now that temperance, and ventilation, and due exercise are getting thought about—to interfere now, of all times, is surely as rash and uncalled for as a step as was ever taken."

This is timely: the Tenement House Department looks after approximately 105,000 legal tenements—housing about 920,000 families. The plumbing, wall-papering and general sanitation are under its care. Factory inspection works toward preventing industrial diseases and accidents. The work of 7,500 physicians of the city.

These are important factors in lowering the death rate and improving the health conditions of Greater New York. From the physician's viewpoint there should be effective co-operation of the tax-payers and the physicians: First, to protect the Department of Health from having imposed upon it all kinds of schemes for the improvement of health, economic, and other conditions of the poor people, who have to live in the City of New York; second, to give active support to the proper Bureaus of the Department, such as sanitation, infectious diseases, food and drugs, vital statistics, and the necessary laboratories; third, to help rid the Department of Health of the activities which do not belong to public health, but which dissipate the forces and interfere with the normal development of the Department's legitimate work. And finally to urge the Health Department, which has executive, legislative and judicial powers, to become more of a judge and less of a competitor in the interest of higher standards and of greater respect.

Dear Doctor—The first social Sunday in the New Year is Child Labor Sunday which has been observed for the past eight years, and which falls in 1915 on January 24th. In issuing its appeal for the observance of the day, the National Child Labor Committee refers to the fact that nearly half of all the children ten to thirteen years of age in three southern states are at work instead of in school. In spite of the rapid progress in legislation between 1900 and 1910, the 13th Census reports that nearly 100,000 children ten to thirteen were at work in non-agricultural occupations throughout the country in 1910, or considerably more than half of the number of such working children in 1900.

One of the Committee's investigators this fall found in a North Carolina mill two little spinners whose grandmother said that they were six and seven years old, and scores of older children at work below the legal age limit, which is thirteen years in that state. Canneries in New York State have persisted in violating the Child Labor Law, because the State Department of Labor has found it impossible to get judgment in local courts against canners who employ small children. Moreover, there are still six states in the Union with no fourteen-year limit for children at work in factories, six states with no compulsory school attendance law, and fifteen states whose fourteen-year limit for factories is practically nullified by exemptions.

For these reasons, and other, the National Child Labor Committee is asking that special attention be given on Child Labor Day to the Palmer-Owen Bill now pending in Congress. It has been favorably reported by the House Committee on Labor, and is on the House calendar for the present session, and there is reason to hope that it will also come to a vote in the Senate. This bill, which has received the endorsement of prominent men of all political parties, proposes a fourteen-year age limit in all factories, mills, canneries and workshops, manufacturing goods for interstate commerce; an eight-hour day and no night work for children fourteen to sixteen in the same occupations; and a sixteen-year limit for mines and quarries.

But besides working for the Palmer-Owen Bill, the committee is continuing its campaign for improved state laws, since the federal bill contains only the basic standards and moreover cannot regulate those forms of child labor in which interstate commerce is not involved. The Illinois law, for instance, already contains the four provisions of the federal bill, but allows boys of sixteen to work as night messengers, and has no age limit whatever for boys and girls in other street trades; while immigrant children of fourteen may go to work without a knowledge of English, provided they can read and write in their native tongue. Iowa does not require work permits at all, but throws the burden of proving the child's age upon the employer. Maine and West Virginia have a fourteen-year limit for factories, but not for stores and no higher age limit for the commonly specified dangerous occupations.

Other state laws have similar defects which can be regulated by the states themselves. The Committee will try to secure improved child labor laws in fifteen states this year, and believes the 12,000 clergymen, school superintendents and teachers from every state, who cooperate in the observance of Child Labor Day, are among its most powerful allies in securing legislation, whether state or federal. Those who wish to observe Child Labor Day in churches or schools can obtain literature free of charge from the National Child Labor Committee, 105 East 22d Street, New York City.



## Legislative Notes

The Committee on Legislation herewith presents the lists of members of the Senate and Assembly for the year 1915. Members of the Society can refer to this list at any time that it may seem advisable to write to their Assemblymen or Senators in regard to legislative matters and all are requested to look it over so that if among those represented there are any men known to them personally they can write them, if requested by the Committee on Legislation to assist or oppose any bills before the Legislature.

### SENATE.

1. George L. Thompson, R., Kings Park, L. I.
2. \*Bernard M. Patten, D., 151 Elm Street, L. I. City.

### BROOKLYN.

3. \*Thomas H. Cullen, D., 256 President Street.
4. Charles C. Lotkwood, R., 954 Greene Avenue.
5. \*William J. Heffernan, D., 598 Fourth Avenue.
6. \*William B. Carswell, D., 121 St. Marks Avenue.
7. \*Daniel J. Carroll, D., 153 N. 3d Street.
8. Alvah W. Burlingame, Jr., R., 96 Hancock Street.
9. Robert R. Lawson, R., 24 Woodbine Street.
10. Alfred J. Gilchrist, R., 249 Crescent Street.

### NEW YORK CITY.

11. \*Christopher D. Sullivan, D., 8 Rutgers Street.
12. Henry W. Doll, D., 49 Third Avenue.
13. James J. Walker, D., 6 St. Lukes Place.
14. \*James A. Foley, D., 316 E. 18th Street.
15. \*John J. Boylan, D., 418 W. 51st Street.
16. \*Robert F. Wagner, D., 244 E. 86th St.
17. Ogden L. Mills, R., 9 E. 84th St.
18. William M. Bennett, R., 225 Central Park West.
19. \*George W. Simpson, D., 468 West 144th Street.
20. Irving I. Joseph, D., 1421 Madison Avenue.
21. John J. Dunnigan, D., 1861 Holland Avenue.
22. James A. Hamilton, D., 897 Crotona Park, North.

### STATE.

23. George Cromwell, R., Dongan Hills, Staten Island.
24. George A. Slater, R., Port Chester.
25. \*John D. Stivers, R., Middletown.
26. \*James E. Towner, R., Towners.
27. Charles W. Walton, R., Kingston.
28. \*Henry M. Sage, R., Menanda.
29. Walter A. Wood, Jr., R., Hoosick Falls.
30. \*George H. Whitney, R., Mechanicsville.
31. Arden L. Norton, R., Cobleskill.
32. Franklin W. Cristman, R., Herkimer.
33. \*James A. Emerson, R., Warrensburg.
34. N. Monroe Marshall, R., Malone.
35. \*Elon R. Brown, R., Watertown.
36. Charles W. Wicks, R., Sauquoit.
37. Samuel A. Jones, R., Norwich.
38. \*J. Henry Walters, R., 315½ Genesee St., Syracuse.
39. William H. Hill, R., Lestershire.
40. \*Charles J. Hewitt, R., Locke.
41. Morris S. Halliday, R., Ithaca.
42. \*Thomas B. Wilson, R., Hall.
43. Charles D. Newton, R., Geneseo.
44. Archie D. Sanders, R., Stafford.
45. \*George F. Argetsinger, R., Rochester.
46. John B. Mullan, R., Rochester.
47. \*George F. Thompson, R., Middleport.
48. Clinton T. Horton, R., 905 D. S. Morgan Bldg., Buffalo.
49. \*Samuel J. Ramsperger, D., 232 Emslie St., Buffalo.
50. William F. Greiner, D., 1037 Walden Ave., Buffalo.
51. George E. Spring, R., Franklinville.

## ASSEMBLY.

### ALBANY.

1. \*Harold J. Hinman, R., 357 Madison St., Albany.
2. \*John G. Malone, R., 8 Wendell Street.
3. \*William C. Baxter, R., 803 Third Ave., Watervliet.

### ALLEGANY.

- \*Elmer E. Ferry, R., Almond.

### BRONX.

- 32 N. Y. William L. Evans, D., 744 Beck St., N. Y. C.
- 33 N. Y. Earl H. Miller, D., 601 Eagle Avenue.
- 34 N. Y. M. Maldwin Fertig, D., 1556 Minford Place.
- 35 N. Y. Jos. M. Callahan, D., 1037 Ogden Avenue.

### BROOME.

- \*Simon P. Quick, R., Windsor.

### CATTARAUGUS.

- De Hart Ames, R., Franklinville.

### CAYUGA.

- William Whitman, R., Venice.

### CHAUTAUQUA.

1. \*A. Morell Cheney, R., Bemus Point.
2. \*John Leo Sullivan, R., Dunkirk.

### CHEMUNG.

- Horace G. Walker, R., Horseheads.

### CHENANGO.

- Bert Lord, R., Afton.

### CLINTON.

- \*Alexander W. Fairbank, R., Chazy.

### COLUMBIA.

- William W. Chace, R., Hudson.

### CORTLAND.

- George H. Wiltse, R., Cortland

### DELAWARE.

- \*Edwin A. Mackey, R., Franklin.

### DUTCHESS.

1. James C. Allen, R., Clinton Corners.
2. Francis G. Landon, R., Staatsburg.

### ERIE.

1. Allan Keeney, R., Prudential Bldg., Buffalo.
2. Ross Graves, R., Erie Co. Bank Bldg.
3. Nicholas J. Miller, R., 12 Cayuga Street.
4. James M. Mead, D., 137 Gold Street.
5. Arthur C. McElroy, D., 100 S. Division Street
6. Peter C. Jerzewski, R., 173 Stanislaus Street.
7. John F. Heim, R., Lancaster.
8. Leonard W. Gibbs, R., Austin Bldg., Buffalo.
9. \*Frank B. Thorn, R., Erie Co. Bank Bldg.

### ESSEX.

- \*Raymond T. Kenyon, R., Ausable Forks.

### FRANKLIN.

- \*Alexander Macdonald, R., St. Regis Falls.

### FULTON AND HAMILTON.

- \*James H. Wood, R., Gloversville.

### GENESEE.

- \*Louis H. Wells, R., Pavilion.

### GREENE.

- \*George H. Chase, R., Jewett.

### HERKIMER.

- Selden C. Clobridge, R., Herkimer.

### JEFFERSON.

1. \*Henry E. Machold, R., Ellisburg.
2. Willard S. Augsbury, R., Antwerp.

### KINGS.

1. \*R. Hunter McQuiston, R., 144 Montague St., B'klyn.
2. \*William J. Gillen, D., 12 Vanderbilt Avenue.
3. \*Frank J. Taylor, D., 50 Van Dyke St.

\* Re-elected.

4. Peter A. McArdle, D., 151 Hewes Street.
5. Fred G. Milligan, Jr., R., 528 Decatur Street.
6. Nathan Shapiro, R., 173 Floyd Street.
7. \*Daniel F. Farrell, D., 378 17th Street.
8. \*John J. McKeon, D., 413 Smith Street.
9. Fred S. Burr, D., 330 80th Street.
10. \*Fred M. Ahern, R., 425 Sterling Place.
11. \*George R. Brennan, R., 1138 Pacific Street.
12. \*William T. Simpson, R., 523 6th Street.
13. \*Herman Kramer, D., 18 Bushwick Avenue.
14. \*John P. La Frenz, D., 65 Java Street.
15. \*James J. Phelan, D., 98 N. Henry Street.
16. \*Samuel R. Green, R., 1454 45th Street.
17. Frederick A. Wells, R., 1228 Pacific Street.
18. \*Almeth W. Hoff, R., 460 Stratford Road.
19. William A. Bacher, D., 12 Suydam Street.
20. \*August C. Flamman, R., 1135 Lafayette Street.
21. Isaac Mendelsohn, D., 3 Cook Street.
22. Charles H. Duff, R., 1397 Madison Street.
23. Nathan B. Finkelstein, R., 39 Thatford Avenue.

## LEWIS.

\*Henry L. Grant, R., Copenhagen.

## LIVINGSTON.

\*Edward M. Magee, R., Groveland Station.

## MADISON.

\*Morrell E. Tallett, R., De Ruyter.

## MONROE.

1. James A. Harris, R., Penfield.
2. \*Simon L. Adler, R., Rochester.
3. John R. Powers, R., Rochester.
4. Frank Dobson, R., Charlotte.
5. Franklin W. Judson, R., Gates.

## MONTGOMERY.

E. Corning Davis, R., Fonda.

## NASSAU.

Thomas A. McWhinney, R., Lawrence.

## NEW YORK.

1. John J. Ryan, D., 189 Greenwich Street, N. Y. C.
2. \*Alfred E. Smith, D., 25 Oliver Street.
3. Carmine J. Marasco, D., 293 Mott Street.
4. \*Henry S. Schimmel, D., 432 Grand Street.
5. Maurice McDonald, D., 344 W. 14th Street.
6. Nathan D. Perlman, R., 27 Avenue D.
7. \*Peter P. McElligott, D., 428 W. 24th Street.
8. Sidney Scharlin, D., 110 Division Street.
9. \*Charles D. Donohue, D., 408 W. 43d Street.
10. Walter M. Friedland, D., 35 1st Street.
11. \*John Kerrigan, D., 342 W. 47th Street.
12. \*Joseph D. Kelly, D., 223 E. 17th Street.
13. \*James C. Campbell, D., 827 10th Avenue.
14. \*Robert L. Tudor, D., 159 Lexington Avenue.
15. \*Abraham Ellenbogen, R., 137 W. 86th Street.
16. \*Martin G. McCue, D., 734 Third Avenue.
17. Martin Bourke, R., 4 W. 92d Street.
18. \*Mark Goldberg, D., 222 E. 72d Street.
19. Patrick F. Cotter, D., 11 W. 108th Street.
20. Frank Aranow, D., 1185 Lexington Avenue.
21. Harold C. Mitchell, R., 321 St. Nicholas Avenue.
22. D. Maurice Block, D., 407 E. 88th Street.
23. Daniel C. Oliver, D., 520 W. 157th Street.
24. \*Owen M. Kiernan, D., 163 E. 89th Street.
25. \*Francis R. Stoddard, Jr., R., 102 Waverly Place.
26. \*Joseph Steinberg, Prog.-R., 57 E. 96th Street.
27. Charles E. Rice, Jr., R., 118 W. 57th Street.
28. Salvatore A. Cotillo, D., 273 Pleasant Avenue.
29. \*Howard Conkling, R., 157 E. 70th Street.
30. Dennis G. Donovan, D., 1806 Park Avenue.
31. Aaron A. Feinberg, R., 137 W. 110th Street.

## NIAGARA.

1. \*William Bewley, R., Lockport.
2. Alan N. Parker, R., Niagara Falls.

## ONEIDA.

1. \*Fred S. Emden, D., Utica.
2. \*Charles J. Fuess, R., Utica.
3. \*J. Brayton Fuller, R., Marcy.

## ONONDAGA.

1. \*Edward Arnts, R., 928 N. 3d Street, Syracuse.
2. J. Leslie Kincaid, R., 407 Emerson Street.
3. \*Jacob R. Buecheler, R., 227 Seward Street.

## ONTARIO.

\*Heber E. Wheeler, R., East Bloomfield.

## ORANGE.

1. \*James B. Montgomery, R., Newburgh.
2. \*Charles J. Boyd, R., Middletown.

## ORLEANS.

A. Allen Comstock, R., Waterport.

## OSWEGO.

\*Thaddeus C. Sweet, R., Phoenix.

## OTSEGO.

Allen J. Bloomfield, R., Richfield Springs.

## PUTNAM.

\*Hamilton Fish, Jr., Prog., Garrison.

## QUEENS.

1. \*Nicholas Nehrbauser, Jr., D., 589 9th Ave., L. I. City.
2. \*Peter J. McGarry, D., 71 Greenpoint Ave., Blissville.
3. Wm. H. O'Hare, D., 33 Parkview Ave., Glendale.
4. Geo. E. Polhemus, D., 71 Union Hall St., Flushing.

## RENSSELAER.

1. John F. Shannon, D., 13th and Christie Sts., Troy.
2. Edwin S. Comstock, R., Nassau.

## RICHMOND.

Stephen B. Stephens, D., 204 Richmond Terrace,  
New Brighton.

## ROCKLAND.

Frederick Grimme, D., Piermont.

## ST. LAWRENCE.

1. \*Frank L. Seaker, R., Gouverneur.
2. E. A. Everett, R., Potsdam.

## SARATOGA.

\*Gilbert T. Seelye, R., Burnt Hills.

## SCHENECTADY.

Walter H. McNab, R., Schenectady.

## SCHOHARIE.

\*Edward A. Dox, D., Richmondville.

## SCHUYLER.

\*Henry S. Howard, R., Watkins.

## SENECA.

\*William J. Maier, R., Seneca Falls.

## STEBEN.

1. Reuben B. Oldfield, R., Bath.
2. Richard M. Prangen, R., Hornell.

## SUFFOLK.

1. \*DeWitt C. Talmage, R., Easthampton.
2. \*Henry A. Murphy, R., Huntington.

## SULLIVAN.

H. Blake Stratton, D., Monticello.

## TIOGA.

\*Wilson S. Moore, R., Candor.

## TOMPKINS.

\*John W. Preswick, R., Ithaca.

## ULSTER.

1. \*Henry R. DeWitt, R., Kingston.
2. \*Abraham P. Le Fevre, R., New Paltz.

## WARREN.

\*Henry E. H. Brereton, R., Diamond Point.

## WASHINGTON.

\*Charles O. Pratt, R., Cambridge.

## WAYNE.

\*Riley A. Wilson, R., Savannah.

## WESTCHESTER.

1. \*George Blakely, R., Yonkers.
2. William S. Coffey, R., Mt. Vernon.
3. \*Walter H. Law, Jr., R., Briarcliff Manor.
4. \*Floy D. Hopkins, R., White Plains.

## WYOMING.

\*John Knight, R., Arcade.

## YATES.

\*Edwin C. Gillette, R., Penn Yan.

\* Re-elected.

## Notes from the State Department of Health

Last year there were 1,817 deaths out of 19,888 cases of diphtheria reported in the State of New York. From this number of deaths we would expect about 30,000 cases, so that it is probable that about every third case of diphtheria was not reported. It is hoped this year to secure a more complete registration of cases. We have compiled data on the deaths that are reported to us for each of the last four months.

Table Showing the Ages of Persons Dying of Diphtheria During August, September, October and November, 1914, in New York State (exclusive of New York City):

| Age, Years. | No. of Deaths. | Age, Years. | No. of Deaths. |
|-------------|----------------|-------------|----------------|
| 0.....      | 7              | 11.....     | 0              |
| 1.....      | 18             | 12.....     | 3              |
| 2.....      | 18             | 13.....     | 2              |
| 3.....      | 22             | 14.....     | 2              |
| 4.....      | 22             | 18.....     | 1              |
| 5.....      | 13             | 19.....     | 1              |
| 6.....      | 19             | 40.....     | 1              |
| 7.....      | 9              | 45.....     | 1              |
| 8.....      | 8              | 48.....     | 1              |
| 9.....      | 8              |             |                |
| 10.....     | 4              | Total.....  | 160            |

The important fact that appears is that only about 3 per cent are among adults, and that 70 per cent of the deaths are children under seven years of age.

Attention of the physicians is therefore called to the importance of taking particular care of the young child. The following procedures are recommended:

1st. When there is a baby or young child in the home of an adult ill with diphtheria, the child should be immediately isolated, cultures should be taken from the throat and nose of the child. If the culture should be negative, then he should be sent to live with adult friends or relatives during the illness of the patient.

2nd. If the child remains at home, when there is a case of diphtheria residing in the house, an immunizing dose of 1,200 units of diphtheria antitoxin should be given to all young children of fifty pounds weight, 500 units to all babies of twenty pounds or less.

3d. To every child of fifty pounds who has the least suspicion of diphtheria a dose of 2,500 units should be given subcutaneously at once, before waiting to learn from the laboratory the report of the cultures. Twenty pound babies should receive about 1,000 units. It is best to err on the safe side—give the antitoxin early.

4th. It is often difficult to secure a satisfactory culture from young children. If a report from the laboratory states that the culture is negative for diphtheria when clinical symptoms persist, take another culture.

5th. If the child is very sick give the antitoxin intravenously; 5,000 units given intravenously is worth 20,000 units given subcutaneously.

6th. Be sure that your Health Officer keeps a sufficient supply of fresh diphtheria antitoxin on hand, ready for instant use. The State Department of Health will supply him with all that he needs.

F. M. MEADER, M.D.,  
Director Division Communicable Diseases.

## New York Society of Anesthetists

At a regular meeting of the New York Society of Anesthetists the following resolution was passed:

*Resolved*, That it be the sense of the New York Society of Anesthetists, that the administration of a general anesthetic by anyone other than a regularly qualified practitioner of medicine be not allowed; and that the County and State Societies be asked to press legislation to this end, and further, that this action by the New York Society of Anesthetists be published in all the State Medical Journals.

H. CLIFTON LUKE, M.D.,  
Secretary.

## Medical Society of the State of New York

The President, Dr. Wende, has appointed Dr. Frederick H. Flaherty, of Syracuse, to represent the Medical Society of the State of New York on Medical Education, and Dr. Francis E. Fronczak, of Buffalo, on Public Health, at the conference on Health and Public Instruction of the American Medical Association in Chicago, February, 1915.

The committee appointed by the Council to act on the resolution to be presented to the Board of Regents asking that it assume the responsibility of the prosecution of illegal practitioners met in Albany, December 16th, at 9 A. M., at the office of Albert Vander Veer.

Those present were: Grover W. Wende, Arthur G. Root, Andrew MacFarlane, R. Paul Higgins, Wisner R. Townsend, Albert Vander Veer and Mr. Whiteside, the Attorney of the Medical Society of the County of New York.

Wisner R. Townsend, of New York; Arthur G. Root, of Albany; R. Paul Higgins, of Cortland, spoke for the committee at a conference of the Advisory Council of the Board of Regents, held at 10.30 A. M., in the Education Building.

Others present were Pliny T. Sexton, Vice-Chancellor; Adeibert Moot and Albert Vander Veer, Regents; John H. Finley, Commissioner of Education; Augustus S. Downing, First Asst. Com. of Education; Otto V. Huffman, Secretary Board of Medical Examiners; Arthur W. Booth and Ralph H. Williams, members of the Board of Medical Examiners; Herman M. Biggs and Linsly R. Williams, Commissioner and Deputy Commissioner State Board of Health, and the Deans of the College of Physicians and Surgeons, Columbia University; University and Bellevue Medical College; College of Medicine, Syracuse University; Medical Department, University of Buffalo; New York Homœopathic Medical College, and representatives from the Homœopathic Medical Society of the State of New York; Eclectic Medical Society of the State of New York; the New York Osteopathic Society, and Dr. Albert T. Lytle, of Buffalo.

### MEETING OF THE COUNCIL.

A regular meeting of the Council of the Medical Society of the State of New York was held at the Hotel Statler, Buffalo, December 5, 1914, at 9.30 A.M. Dr. Grover W. Wende, President, in the Chair. Dr. Wisner R. Townsend, Secretary.

The meeting was called to order by the President, and on roll call the following answered to their names: Drs. A. G. Bennett, F. H. Flaherty, Alexander Lambert, G. Lenz, A. T. Lytle, T. H. McKee, M. B. Palmer, R. Selden, W. T. Shanahan, S. W. S. Toms, Wisner R. Townsend, G. W. Wende.

Drs. J. S. Cooley, R. M. Elliott, L. K. Neff, F. Van Fleet, H. L. Winter sent excuses.

As the minutes of the last meeting had been approved they were not read.

The report of the Committee on the disposition of the books in the Kings County Library was presented by the Secretary.

### REPORT OF THE COMMITTEE ON DISPOSITION OF LIBRARY.

The committee appointed by the Council at its meeting April 30, 1914, to comply with the request of the Medical Society of the County of Kings in regard to the disposition of books in the Kings County Medical Library begs leave to report as follows:

*Whereas*, in May 1906, a contract was entered into between the Medical Society of the State of New York and the Medical Society of the County of Kings, whereby certain books, periodicals and publications were to be transferred to the Medical Society of the County of Kings, and

*Whereas*, it appears from the reports to the Council of the Medical Society of the State of New York that there are certain books and periodicals that are of no importance or value to the Medical Society of the County of Kings and its Library, and

*Whereas*, it appears that it is desired by the parties to the above contract that other disposition be made

of books and periodicals received from the Medical Society of the State of New York, it is now agreed and consented to between the Medical Society of the State of New York and the Medical Society of the County of Kings that a modification of said contract be made as follows, and that temporarily and as a modification of said contract both the parties of said contract mutually agree as follows:

That the volumes now on deposit in the state in any County Medical Society and under their control be offered to the New York State Library, located at the Capitol in Albany, N. Y., and that if they are not desired by the State Library that they be offered and donated to the National Medical Library Association Exchange, Baltimore, or for distribution throughout the medical libraries throughout the country. That for the purpose of carrying out this desire of the said parties the Secretary of the Medical Society of the State of New York be considered the arbitrator with full power representing both the parties hereto, and that his decision as to the disposition of the said volumes, periodicals and literature be final.

To this modification of the contract now existing, the hand and seal of both parties hereto subscribed, and their seal affixed, this 9th day of October, 1914.

JOSHUA M. VAN COTT, *Chairman Committee*  
*Appointed by Council on disposition of Library.*

J. RICHARD KEVIN, *President, Medical Society of the County of Kings.*

GROVER W. WENDE, *President, Medical Society of the State of New York.*

FREDERICK TILNEY, *Directing Librarian, Medical Society of the County of Kings.*

Upon motion duly seconded and carried the report was accepted.

The report of the committee to prepare uniform by-laws for the District Branches was presented by the Secretary.

#### REPORT OF THE COMMITTEE TO PREPARE UNIFORM BY-LAWS.

The committee, appointed by the Council at its meeting on May 29, 1914, to prepare uniform by-laws for the District Branches, begs leave to present the following by-laws which were sent to the various branches and introduced at their fall meetings, and will be acted upon next year.

#### DISTRICT BRANCH BY-LAWS.

##### CHAPTER I.

#### *Name, Membership and Purpose.*

Section 1. The . . . . District Branch shall include all members in good standing of the medical societies of the counties of . . . . .

Sect. 2. The purpose of the . . . . District Branch shall be to promote the scientific interests of the medical profession, especially within this district, and to cooperate with the Council of the Medical Society of the State of New York in any manner which that Body may direct.

##### CHAPTER II.

#### *Officers.*

Section 1. The officers shall consist of a President, Vice-President, Secretary and Treasurer. They shall, with the Presidents of the county societies comprising the District Branch, constitute the Executive Committee.

Sect. 2. The officers shall be elected by ballot at the annual meeting of the District Branch.

Sect. 3. The officers elected shall assume office and the duties thereof upon the final adjournment of the annual meeting of the Medical Society of the State of New York, and shall serve for the ensuing two years and until their successors are elected.

Sect. 4. The President shall be the Councilor for the District. He shall, upon request of the county societies, assist in arranging their scientific programs; shall organize county societies where none exist; preside at all meetings, and perform such other duties as the Constitution, By-Laws and Resolutions of the Medical Society of the State of New York, and of the District Branch shall direct.

Sect. 5. The Vice-President shall assist the President in the discharge of his duties. In the event of the death, resignation, removal, incapacity, neglect, or refusal to act, the Vice-President shall immediately assume and discharge all the duties and obligations, and enjoy all the privileges of the President and shall immediately succeed to his office.

Sect. 6. The Secretary shall attend all meetings, keep the minutes and perform such other duties as usually pertain to his office.

Sect. 7. The Treasurer shall receive and disburse all moneys for the District Branch granted by the House of Delegates or by the Council. He shall make an annual report and send a copy of the same to the Treasurer of the Medical Society of the State of New York. He shall pay out no moneys except upon an order signed by two members of the Executive Committee.

Sect. 8. The Executive Committee shall meet at the call of the President, shall prepare the program for the annual meeting, and shall transact such other business as may come before it.

#### CHAPTER III.

#### *Meetings.*

Section 1. The . . . . District Branch shall hold an annual meeting, the time and place to be selected by the Executive Committee . . . . . members shall constitute a quorum.

Sect. 2. Special meeting may be held at the request of twenty members, and at such meeting no business can be transacted except that for which the meeting was called. All calls for special meetings shall state the time and place for holding such meetings.

Sect. 3. At the annual meeting the President shall deliver an address.

#### CHAPTER IV.

#### *Order of Business.*

1. Reading of minutes of last meeting.
2. Report of Executive Committee.
3. Election of Officers.
4. Report of Officers and Committees.
5. Unfinished business.
6. New business.
7. President's address.
8. Scientific session. (1) Presentation of patients. (2) Papers of the meeting. (3) Presentation of specimens and instruments. (4) Report of cases.

#### CHAPTER V.

#### *Rules of Order.*

Section 1. The deliberations of the District Branch meetings shall be governed by parliamentary usage as contained in Robert's Rules of Order, when not in conflict with the Constitution and By-Laws of the Medical Society of the State of New York.

#### CHAPTER VI.

Amendments or additions to these By-Laws may be made by a two-thirds vote of the members present at any annual meeting, provided that such amendments or additions shall have been presented in writing at the annual meeting preceding and that a copy of such amendments or additions shall have been sent to each member with the notice of the meeting at which they are to be considered and shall first be approved by the Council of the State Society.

HENRY L. WINTER, *Chairman*; ARTHUR G. BENNETT,  
JAMES S. COOLEY, GEORGE LENZ, WILLIAM T.  
SHANAHAN.

Upon motion, duly seconded and carried, the report was accepted.

The report of the committee appointed to organize the Red Cross Work in this State was presented by Dr. Flaherty.

#### *Report of the Committee on Red Cross Work.*

The committee appointed for organizing the Red Cross Work in connection with the various county medical societies of New York State, begs to submit the following report:

After communicating with Major Robert Patterson of the Medical Corps, United States Army, as to just

what was expected, and learning that each of the County Presidents had already received a letter from the National Red Cross Society, I wrote to each of the Presidents of each of the various District Branch Societies, requesting that they in turn take up with each of the Presidents of the various County Societies the matter of arranging this work, explaining Dr. Patterson's letter which said: "Their desire is to have a Committee on Red Cross Medical Work" formed in every city or county medical society. To such committees they will refer for recommendations for men to act as instructors or examiners of Red Cross First Aid classes, and for men to assist the Red Cross in case of disaster in your locality; to call on them for recommendations regarding men who may serve the Red Cross in time of war, or, as at present, in giving assistance to the belligerent powers in Europe. In other words, the committee will simply act in an advisory capacity to the Red Cross. In this way they expect to get men who are vouched for by the best medical men in each locality, and thus insure a high grade of men for service in the Red Cross when needed.

Some of the District Branch Presidents have written me informing me that the Presidents in their county societies have already appointed these men and that their names had been forwarded to Dr. George Kober, who is in charge of this department of the Red Cross Society at Washington, D. C.

*Respectfully submitted,*

FREDERICK FLAHERTY.

On motion, duly seconded and carried, the report was accepted.

The Secretary presented a letter from the State Board of Medical Examiners inviting the Medical Society of the State of New York to send representatives to a conference to be held in the Board of Education Building in Albany on December 16th to consider the following:

"Resolved, That the State Board of Medical Examiners appoint a committee of three to draft resolutions to the Department of Education recommending the calling of a conference between a committee of the Board of Medical Examiners, representatives from the Department of Education and the Department of Health, and committees from the medical, osteopathic, dental and pharmaceutical societies of the State of New York, with a view to devising a plan of securing more efficient enforcement of the medical, dental and pharmaceutical laws."

It was moved, seconded and carried that "the Council of the Medical Society of the State of New York request the Board of Regents to assume the responsibility of the prosecution of illegal practitioners."

Moved, seconded and carried that a committee of five be appointed to assist in carrying out the previous resolution, the President to be a member of the committee. Dr. Wendt appointed as the committee: Dr. Wisner R. Townsend, chairman; Drs. R. Paul Higgins, of Cortland; Andrew MacFarlane, of Albany, and Arthur G. Root, of Albany.

The following letter was read from the Secretary of the Council on Medical Education of the American Medical Association:

"Dear Doctor Townsend: In an effort to secure a reliable list of hospitals which may be considered acceptable from the standpoint of furnishing a satisfactory training for internes, our Council has appointed in each State a committee of three to act in an advisory capacity. On these committees we have, so far as possible, secured representatives of (1) the State Medical Association, (2) the State licensing board, and (3) a high-grade medical school (where there is one in the State). The committee which has been selected for New York is as follows: Dr. John L. Heffron, chairman; Drs. William F. Campbell and Samuel W. Lambert, members.

"Would it not be an excellent plan for your State Medical Society to take action endorsing this committee and in that way be in position to obtain from the committee an official report regarding the hospital sit-

uation in New York? An endorsement of the committee and its work by your society would give added weight to such lists as are prepared.

"Awaiting with interest your reply, we are,

"Very truly yours,

"COUNCIL ON MEDICAL EDUCATION,  
"Per N. P. COLWELL, *Secretary.*"

Moved, seconded and carried that the Council approve of such committee and its objects and endorse Dr. John L. Heffron, chairman, and Drs. William F. Campbell and Samuel W. Lambert as members.

Moved seconded and carried that the Committee on Legislation be authorized to promote or oppose legislation with the consent of the Council.

Moved, seconded and carried that the Secretary write the report of the Council to be presented at the next Annual Meeting of the House of Delegates.

The report of the Committee on Publication was presented by Dr. Lambert.

#### REPORT OF THE COMMITTEE ON PUBLICATION.

The Committee on Publication begs leave to submit the following resolution to the Council for approval:

"That in order to reduce the expense of publishing the Medical Directory the committee recommends that in the 1915 edition all society data excepting the County, State and National Societies and local and national Societies of Specialties, Academies of Medicine and Hospital Alumni Associations be omitted;

"That the Benevolent Institutions in New York State, with the exception of the State Hospital, be omitted;

"That the data of the Board of Health of New York City be abbreviated as far as possible;

"That a less expensive cover be used."

The committee also begs leave to report that the cost of the JOURNAL has been materially reduced and edition limited to fifty-six pages and cover each month.

FLOYD M. CRANDALL, Chairman; ALEXANDER LAMBERT, JOHN C. MACEVITT, VICTOR A. ROBERTSON, S. W. S. TOMS.

On motion, duly seconded and carried, the report was accepted and the committee instructed to carry out the recommendations in the next edition of the directory.

The following letter was read from the Secretary of the Medical Society of the County of Erie:

"Dear Doctor Wendt: Not a session of the State Legislature passes without bills being introduced, and many of them passed, inimicable to the best interests of the state and especially to the medical profession.

"The Medical Society of the State of New York has, for years, maintained a Legislative Committee whose duty it is to look after all medical bills.

"It is manifestly impossible for any medical man to attend to such matters properly. To do this work as it ought to be done would require his presence at Albany during the entire session of the Legislature.

"No physician can afford to neglect his practice for such work, even if his actual expenses are paid. Furthermore, he must contend with professional lobbyists who are constantly at work for parties interested in getting such legislation.

"In view of these facts, the Council of the Medical Society of the County of Erie respectfully requests you, as President of the Medical Society of the State of New York, and the regular State Committee on Legislation of the State Society, to employ a competent person to attend the next session of the State Legislature continuously, for the purpose of preventing legislation detrimental to the medical profession and the best interests of the State along medical and surgical lines.

"Adopted by the Council at a regular session held September 21, 1914.

"Respectfully submitted,  
"FRANKLIN C. GRAM, *Secretary.*"

Moved, seconded and carried that the Council is opposed to employing a paid lobbyist.

The following letter from Dr. Wendt to the Presidents of all the County Societies was then read:

"My dear Doctor: I want earnestly and forcefully to call your attention to two conditions; one of the past and the other of the immediate future, and to ask you to act on this information carefully and without delay.

"You will recall that during the regular session of the last Legislature serious and almost successful efforts were made to undermine the present Medical Practice Act, to wit: the Osteopaths had a bill passed by both Senate and Assembly but vetoed by the Governor, giving them special privileges; the Christian Scientists had a bill passed by both Senate and Assembly but vetoed by the Governor, practically permitting them to practice medicine without previously obtaining a State license. A bill was passed by the Senate by a large plurality but was defeated in the Assembly by a small vote, which granted Naturopaths the right to practice medicine without a licensing examination, and a bill was passed by the Senate by a large plurality but was defeated in the Assembly by a small vote, granting Chiropractics the right to practice medicine without a licensing examination.

"The second consideration is that the State Society has positive evidence that encouraged and emboldened by their successes of last winter and by a belief that the organized profession is indifferent and apathetic, these same interests are preparing a stronger campaign for the next Legislature and that unless the profession begins an active defensive campaign at once, these interests stand a fair chance to break down the present high standard of medical practice requirements in the State of New York and bring the profession under justifiable ridicule.

"In consideration of these momentous conditions it is my duty as President of the State Society to appeal to you to see that the forces of your society are not only at work, but doing it effectively; and as President of your County Society, it is your official duty and special privilege to keep every officer busy and to initiate methods not only to successfully combat these vicious efforts to lower the standard of medical practice, but to strive to place it upon a higher level so as to insure the physical welfare not only of the individual, but of the State and Nation.

"To meet the present emergency the Chairman of the State Committee on Legislation requests that you bring this matter before your County Committee on Legislation and urge them to get busy at once, bringing the attention of the members of the society to the necessity of exerting the weight of their influence upon the Senator and Assemblymen of their districts. If you are to have an election of officers soon, please see that this matter is taken up by the incoming President and Committee on Legislation. If you have no Committee on Legislation appoint at once a special committee to act in this matter.

"This matter is serious enough to warrant the calling of a special meeting of your society unless you are to have a regular meeting within thirty days. At this meeting should be appointed a special subsidiary committee on legislation to act with the regular committee. This special committee should comprise representative, influential and well-known physicians who will enlighten the members of the Legislature as to the requirements of the present Medical Practice Act and as to the danger to public health by permitting any person to practice medicine unless these requirements have first been satisfied; this special committee should be ready to go before the Legislature if necessary. The entire membership should endeavor to inform the public of the nature of the Medical Practice Act and of the protection afforded them by its requirements, thereby creating public sentiment against any lowering of the standards.

"As the Legislature meets early in 1915, you will appreciate the necessity for immediate action. In order that the State and County Committees may be in touch, please promptly (not later than January 1, 1915) notify Dr. Lewis K. Neff, Chairman, No. 1213 Park Avenue, New York, of the names and addresses of the committees.

"As one who has only the highest advancement of

the profession in mind you will give this matter your best endeavors I know.

"With kind regards, believe me,

"Sincerely yours,

"GROVER W. WENDE, *President.*"

Moved, seconded and carried that the letter be spread upon the minutes of the meeting.

Dr. Lambert, Treasurer, reported a balance on hand of ..... \$14,353.04  
Less outstanding bill, printing of Directory.. 5,751.50

Balance ..... \$8,601.48

On motion, duly seconded and carried, the report was accepted.

Dr. McKee, Chairman of the Committee on Scientific Work, reported progress.

Dr. Lytle, Chairman of Committee on Arrangements, presented the following report:

The Committee on Arrangements reports progress. The Society has been offered and has accepted the use of the armory of the 65th Infantry, N. G., S. N. Y. All the exercises of the Society will be held there except the banquet. The armory is about fifteen minutes' car ride from the noise and bustle of the city, thus insuring proper quiet. An excellent restaurant is planned so that nothing need take a member away from this building in which may be found every convenience.

State law requires the giving of a bond by non-military occupants and the committee requests the authorization of such bond by the Council.

The authorization by the Council of the following sub-committees, all Buffalonians, is also requested.

*Reception.*—Charles G. Stockton, Chairman; Arthur W. Hurd, Henry R. Hopkins, William H. Thornton, Henry C. Buswell, Herman E. Hayd, Edward J. Meyer, Harvey R. Gaylord, De Lancey Rochester, Allen A. Jones, Edgar R. McGuire, Thomas J. Walsh, Bernard Cohen, James A. Gardner, Lee Masten Francis, Francis E. Fronczak.

*Meeting Rooms.*—Nelson G. Russell, Chairman; Albert H. Briggs, Renwick R. Ross, Stephen Y. Howell, Theodore M. Leonard, Arthur C. Schaefer.

*Publicity.*—A. L. Benedict, Chairman; William W. Quinton, George A. Himmelsbach.

*Ladies.*—Edith R. Hatch, Chairman; Helene J. C. Kuhlmann, Maud J. Frye, Myrtle A. Hoag, Lucy A. Kenner, Caroline Lichtenberg, Elizabeth Dort.

*Transportation.*—Carl G. Leo-Wolf, Chairman; William Gaetner, Robert E. DeCeU, Edward M. Tracy, Nelson W. Strohm.

*Banquet and Hotels.*—Lesser Kauffman, Chairman; James F. Whitwell, William G. Bissell, Earl P. Lothrop, Frederick J. Parmenter.

*Registration and Information.*—Edward A. Sharp, Chairman; John R. Gray, Clayton M. Brown, John L. Butsch, William L. Phillips, Frank N. Potts, Descum C. McKenney, Herman K. DeGroat, William F. Jacobs, Herbert A. Smith, Wm. Ward Plummer, Augustus W. Hengerer, Nadina R. Kavinoky.

*Exhibits and Audits.*—Albert T. Lytle, Chairman; Arthur G. Bennett, Julius Richter.

Brig.-Gen. Samuel M. Welch, Col. Charles E. P. Babcock and Maj. Nelson G. Russell invite the Council to accompany them on a tour of inspection of the 65th Infantry Armory. The committee requests the acceptance of this invitation.

Respectfully submitted,

ALBERT T. LYTLE, *Chairman.*

A recess was taken and the visit made. Moved, seconded and carried, that the President be requested to extend the thanks of the Council to General Welch, Colonel Babcock and Major Russell for their courtesy.

Moved seconded and carried that the President and Chairman of the Committee on Arrangements be authorized to sign the bond, and the Treasurer authorized to pay the necessary expense.

There being no further business the meeting adjourned at 12.30, subject to the call of the Chair.

WISNER R. TOWNSEND, *Secretary.*

### County Societies

#### QUEENS-NASSAU MEDICAL SOCIETY.

ANNUAL MEETING, AT JAMAICA, DECEMBER 1, 1914.

##### BUSINESS SESSION.

The annual meeting of the Queens-Nassau Medical Society was one of the most interesting meetings in the history of the Society. There was a large attendance, between forty and fifty members being present. The Secretary reported the transfer of the membership of B. P. McLean, of Huntington, to the Suffolk County Society, and the deaths of two members, Henry MacDonald, of Richmond Hill, and Patrick J. McKeown, of Long Island City. The Treasurer made a preliminary report, and stated that there would be a balance of about \$250 in the treasury at the close of the present year, after all bills had been paid. A complete report, together with that of the Auditing Committee, will be published in the Year Book to be issued in January. Five new members were elected upon recommendation of the Board of Censors.

The following officers were elected for the ensuing year:—President, Herbert L. Barker, Woodside; Vice-President, Edward H. Pershing, Woodmere; Secretary-Treasurer, James S. Cooley, Mineola. Board of Censors, Ralph F. Macfarlane, Astoria; Howard M. Phipps, Hempstead; Louis A. Van Kieeck, Manhasset; Luther H. Kice, Baldwin; Margaret M. York, Flushing; Historian, Walter Lindsay, Huntington. Delegates to the Medical Society of the State of New York for two years, John Henry R. Barry, Long Island City; William J. Malcom, Jericho; William H. Runcie, Freeport.

The Chairman of the Committee on County Tuberculosis Hospital reported that a referendum as to whether a tuberculosis hospital for Nassau County should be erected, was carried in the affirmative, at the last election, by a majority of 157, and that the hospital would undoubtedly be erected in the near future.

The Committee on Public Health Instruction and Publicity, reported progress in connection with a report by the Chairman of the Committee on Improved Hospital and Ambulance Service. It was stated that there was some difficulty in reference to the care of tuberculosis cases in the Borough of Queens, as the authorities had recently ruled that tuberculosis patients having a temperature of over 100 degrees, could not be transferred, and further, that the city could not pay for such patients unless they had a temperature of 100 degrees. In view of this statement, the following resolution was adopted:

*Resolved*, That the President of the Society be, and is hereby authorized and directed to appoint a committee to confer with proper authorities for the purpose of ascertaining the facts in the matter of the transfer of tuberculosis cases in the Borough of Queens, and taking such action in regard to the same as may seem necessary and proper.

The President appointed the following committee:—John J. Kindred, Long Island City; Charles B. Story, Bayside; William H. Nammack, Far Rockaway; Martin F. Burns, Long Island City; Walter G. Frey, Astoria.

##### SCIENTIFIC SESSION.

Irving F. Barnes, M.D., Oyster Bay, read a very interesting paper upon "Medical Inspection of Schools." This paper was based upon the experience of Dr. Barnes as Medical Inspector for the last two years.

Margaret M. York, M.D., Flushing, gave an interesting account of her experience in the use of certain drugs in cases of confinement, to produce what has been termed the "Twilight Sleep."

Benjamin W. Seaman, M.D., Rockville Center, read a very carefully prepared paper upon "Papilloma of the Bladder," with the report of an interesting case which occurred in his practice.

John Henry Barry, M.D., Long Island City, gave a brief statement as to the results of an autopsy in the case of Clarence E. Pantzer, a private soldier, whose

death occurred after having received anti-typhoid vaccination. The autopsy showed, according to the statement of Dr. Barry, that death was due to endocarditis, and not to typhoid.

P. W. Huntington, M.D., Captain of the Medical Department at Fort Totten, clearly and emphatically supplemented the statement of Dr. Barry, and stated that anti-typhoid vaccination is now compulsory in the United States Army, for all enlisted men not over forty-five years of age; that in the last year covered by the report of the Surgeon General, there had been but four cases of typhoid in the 90,000 or more United States soldiers, two of these being men over forty-five years of age; so that typhoid fever had virtually been exterminated.

#### MEDICAL SOCIETY OF THE COUNTY OF STEUBEN.

SEMI-ANNUAL MEETING, AT HORNELL, TUESDAY, OCTOBER 13, 1914.

##### BUSINESS SESSION.

The following amendments to the Constitution and By-Laws were approved.

Chapter IX, amended to read as follows:

Section 1. Regular meetings shall be held on the last Tuesday in May, at a place and hour to be fixed by the Comitia Minora.

Section 2. The annual meeting shall be held on the last Tuesday in October, in the Village of Bath, at which time Officers, Chairmen of Standing Committees, and Delegates to the Medical Society of the State of New York shall be elected.

##### SCIENTIFIC SESSION.

1. Vice-President's Address, "How the Death Rate can Positively be Reduced," Dr. William E. Barron, Addison, N. Y. Discussion, Dr. William W. Smith, Avoca, N. Y.

2. "The Workings of the New Sanitary Code," Dr. John A. Conway, Hornell, N. Y. Discussion, Dr. D. P. Mathewson, Bath, N. Y.

3. "The Endometrium," Dr. Otto K. Stewart, Canisteo, N. Y. Discussion, Dr. Harvey P. Jack, Hornell, N. Y.

4. Address by the President of the Medical Society of the State of New York, Dr. Grover W. Wende, Buffalo, N. Y.

5. "Some Remarks on Foreign Methods," Dr. James E. Walker, Hornell, N. Y. Discussion, Dr. John G. Kelly, Hornell, N. Y.

6. "Report of a Case—Colon Infection," Dr. Carl Schumann, Campbell, N. Y. Discussion, Dr. Herbert B. Smith, Corning, N. Y.

7. "Treatment of Alcoholism and Drug Habits," Dr. Frederick C. Robbins, Hornell, N. Y. Discussion, Dr. J. Raymond Kelly, Hornell, N. Y.

8. Report of the Norwich Meeting of the Sixth District Branch Medical Society State of New York, Dr. Leon M. Kysor, Hornell, N. Y.

9. In Memoriam, the late Dr. Herman R. Ainsworth, Dr. Frank C. Shaut, Addison, N. Y.

The luncheon served at the Steuben Federation Building; Five O'clock Tea, at the St. James Mercy Hospital, and Beefsteak Broil given by the members of the Hornell Medical and Surgical Association, at the Log Cabin, were greatly enjoyed by those who participated.

#### CORTLAND COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, AT CORTLAND, THURSDAY, DECEMBER 18, 1914.

##### BUSINESS SESSION.

The following officers were elected for the ensuing year: President, Frank D. Reese; Vice-President, Edward W. McBirney; Secretary, James Walsh; Treasurer, Samuel J. Sornberger. Censors, Henry T. Dana, Frank D. Reese, Halsey J. Ball, Philip M. Neary and James Walsh. Delegate to State Society, R. Paul Higgins.

MEDICAL SOCIETY OF THE COUNTY OF  
ERIE.

NINETY-THIRD ANNUAL MEETING, BUFFALO,  
DECEMBER 21, 1914.

President, Woodruff presided.

Secretary Gram read the minutes of the meeting of October 19, 1914, and those of the Council meeting of December 7, 1914, both of which were adopted by the Society.

Treasurer Lytle asked that the usual order of business be suspended so that he might be permitted to present his annual report. Such permission was granted and he presented his report which, however, will be subject to some changes before the end of the year, but the summary of which was as follows:

|   |            |     |
|---|------------|-----|
| Total members at the beginning of the year.             | 524        |     |
| Members added during the year 1914.....                 | 125        |     |
|   |            | 649 |
| Lost through death .....                                | 3          |     |
| Lost by removal .....                                   | 1          |     |
|   |            | 4   |
|   |            |     |
| Total membership at the close of year.....              |            | 645 |
| Total receipts during the year.....                     | \$3,637.01 |     |
| Paid to Med. Soc. S. of N. Y. for membership dues ..... | 1,602.00   |     |

After deducting other expenses leaves balance in treasury of ..... \$1,170.82

President Woodruff then announced that the next order of business would be the election of officers, and he appointed, as tellers, Drs. Hatch, Whitwell and Bennett.

A recess was declared to give members an opportunity to vote.

After recess, Dr. Wende, Chairman of the Membership Committee, reported a list of twenty applicants, all of which had been favorably acted upon by the Council, and recommended for election. Each candidate was separately voted on and declared duly elected.

In connection with this list of applicants, Chairman Wende presented the following brief but pointed annual report of his committee:

"The Membership of this Society, at the close of our last annual meeting, consisted of 524 members, of which 523 were active and one honorary; of this number three have died and one has removed during the past year, leaving a total of 520 members. To this may be added for active members 125, of whom four have applied for retirement and, if elected, will leave a total membership of 641.

"JULIUS RICHTER,  
"A. G. BENNETT,  
"ELMER A. D. CLARK,  
"GROVER W. WENDE."

This report was received with applause and the thanks of the Society.

Dr. Henry R. Hopkins, Chairman of the Committee on Public Health, presented a verbal report of the activities of his committee, and moved the following resolution, which was adopted:

"WHEREAS, The Medical Society of the County of Erie, State of New York, at its annual meeting of December 18, 1911, adopted resolutions requesting those in authority when reporting cases of smallpox to report the facts of vaccination or non-vaccination of said cases; and,

"WHEREAS, Subsequent to that date—December 18, 1911, nine of our states have so reported their cases of smallpox; and,

"WHEREAS, The United States Public Health Reports for October 2, 1914, give such reports; and,

"WHEREAS, These reports mention 20,835 cases of smallpox, only 540 of which cases had been vaccinated within seven years preceding the attack; and,

"WHEREAS, We believe the same immunity towards smallpox is enjoyed by all recently and properly vaccinated persons; and,

"WHEREAS, We also believe that the national expres-

sion of such immunity would constitute a safeguard of vast proportions; therefore,

"Resolved, That the Medical Society of the County of Erie earnestly requests those in authority—the Medical Society of the State of New York, The American Medical Association, and the United States Public Health Service—to continue their interest and support of this mode of reporting cases of smallpox until the same shall be the rule in every state and territory of America.

"Resolved, That copies of these resolutions be sent, under the seal of this Society, to such officers and associations as have been or may be interested in this important item of preventive medicine.

"JOSEPH P. GIMBRONE,  
"J. F. WHITWELL,  
"HENRY REED HOPKINS, Chairman,  
"Committee on Public Health."

Dr. John D. Bonnar, Chairman of the Board of Censors, submitted a very interesting report on the activities of the Censors, together with a report of the Counsel of the Society for the past year.

Report was received and ordered filed.

On motion of Dr. Bennett, a resolution was adopted instructing Dr. Albert T. Lytle, Chairman of the Committee on Arrangements for the coming meeting of the Medical Society of the State of New York, to secure the valuable exhibit of the American Medical Association.

On motion of Dr. Bonnar, the usual honorarium of \$100 was voted to be given to Mr. Albert L. Harrison, Attorney of the Board of Censors, for his services during the past year.

At this time Dr. Whitwell presented the report of the tellers of election, according to which the following were declared, by the President, to be duly elected as officers of the Society for the year 1915:—President, Arthur W. Hurd; First Vice-President, Franklin W. Barrows; Second Vice-President, Irving W. Potter; Secretary, Franklin C. Gram; Treasurer, Albert T. Lytle. Censors, John D. Bonnar, Francis E. Fronczark, Arthur G. Bennett, Archibald D. Carpenter, Charles Battaglia. Chairman, Committee on Legislation, Harvey R. Gaylord; Chairman, Committee on Public Health, Henry R. Hopkins; Chairman, Committee on Membership, William F. Jacobs; Chairman, Committee on Economics, John V. Woodruff. Delegates to State Society, Charles G. Stockton, Thomas H. McKee, Arthur W. Hurd, Edward L. Frost, Edith R. Hatch.

President Woodruff then called President-elect Hurd to the chair, and read his annual report as retiring President, in which he laid strong emphasis on the economic problems confronting the physicians of the present and the possible effects on the future.

Dr. Bonnar moved that a vote of thanks be given to the retiring President for his address and his valuable services during the past year.

Motion was unanimously carried.

A letter from Dr. Grover W. Wende, President of the Medical Society of the State of New York, was read by the Secretary, in which he directed attention to pernicious legislation secured in the past and called special attention to the obnoxious bills which were vetoed by the governor last year, after having passed the Senate and Assembly, and which are again likely to be introduced at the coming session of the state legislature.

Dr. Lytle moved that the Secretary be empowered to send to each member of the Society a communication, embodying the facts contained in State President Wende's letter, also to include the list of senators and assemblymen, and requesting the members to use their personal influence on these legislators, but that this should be done in co-operation with the incoming Committee on Legislation. Carried.

The Chair called upon Dr. Lytle to supplement his letter with personal remarks.

Dr. Wende stated that his letter covered the subject thoroughly, but he laid special stress on the



necessity for seeing senators and assemblymen. Last year, personal interviews by those interested in and desiring the obnoxious legislation were the influences which were instrumental in bringing about their passage in the Legislature; and not only once, but many times, did these interested parties see their representatives in the Legislative bodies; hence it is absolutely necessary that every member of the medical profession who is opposed to legislation which will be harmful to the profession must get busy and remain busy to counteract the attempts to pass legislation inimical to our profession.

Unless physicians interest themselves the legislators naturally conclude that they are indifferent to such proposed legislation.

On motion of Dr. Bennett the usual honorarium of \$100 each was voted to the Secretary, Treasurer and Chairman of the Board of Censors for services during the past year.

There being no further business the meeting adjourned.

MEDICAL SOCIETY OF THE COUNTY OF  
NEW YORK.

109TH ANNUAL MEETING, AT NEW YORK ACADEMY OF  
MEDICINE, MONDAY, NOVEMBER 23, 1914.

In accordance with the By-Laws the Annual Reports of the Officers, Committees and Counsel were received

The annual report of the Comitia Minora showed an average attendance of 289 at each of the eight meetings during the year. One hundred and seventy members have been added to the roll of the Society during the year, 33 lost by death, 41 by resignation, all on account of removal from the city, with the exception of two, who gave no reason for resigning. One hundred and forty-one have been transferred to the Medical Society of the County of the Bronx. Present membership 2,481. One hundred and seventy-six members of the Society have taken an active part in the work of the year.

Mr. Almuth C. Vandiver at the close of his report, explained that this was his valedictory, after having served the Society in the position of Counsel for a period of seven years. He called attention to the fact that the placing of the present Medical Practice Act upon the statute books of the state was due to the efforts of the Medical Society of the County of New York, that this statute had been given a full trial and found most satisfactory. He urged upon the Society the importance of the realization of the fact that future attacks upon this law would probably come through attempts at its change or amendment through the legislature, and warned the Society to be ready for the attack. He then introduced Mr. George W. Whiteside, his successor.

The amendments to the By-Laws as presented by Dr. Emil Altman at the October 26, 1914, meeting were not adopted.

Dr. William S. Gottheil presented the following resolution:

Resolved, That the schedule of fees for physicians working under the Workmen's Compensation Law is insufficient compensation, and is hereby repudiated by the Medical Society of the County of New York.

Dr. Henry S. Stark presented the following amendment, which was accepted by the mover:

And that the Delegates to the State Society be instructed to introduce a resolution to the same effect at the next meeting of the State Medical Society and to support it in every way possible.

The amended motion was unanimously carried.

The annual report of the Treasurer, Dr. C. H. Richardson, was then read. It showed:

Balance on hand Nov. 19, 1913..... \$1,147.94  
Balance on hand Nov. 18, 1914..... 1,945.26

An itemized account of receipts, disbursements, assets and liabilities will be mailed to each member of the Society.

The following officers were elected for the ensuing year:—President, Howard Lilienthal; First Vice-President; Frederic E. Sondern; Second Vice-President,

George D. Stewart; Secretary, John Van Doren Young; Assistant Secretary, Daniel S. Dougherty; Treasurer, Charles H. Richardson. Censors, Joseph, B. Bissell, Charles H. Chetwood, John H. Huddleston. Delegates to the State Society, Wendell C. Phillips, Walter Lester Carr, E. Eliot Harris, George Barrie, Samuel Lloyd, Howard Lilienthal, Charles H. Richardson, T. Passmore Berens, E. Franklin Smith, Henry S. Stark, Frederic E. Sondern, Jerome M. Lynch, Joseph B. Bissell, Floyd M. Crandall, Maurice Packard, Charles Herrman, Frank Van Fleet.

MEDICAL SOCIETY OF THE COUNTY OF  
WESTCHESTER.

ANNUAL MEETING, AT WHITE PLAINS, TUESDAY,  
NOVEMBER 17, 1914.

BUSINESS SESSION.

There was a very large attendance, about 145 members being present.

The following officers were elected for the ensuing year: President, Samuel E. Getty; Vice-President, Bertrand F. Drake; Secretary, Walter S. Woodruff; Treasurer, Walter W. Mott. Censors, John W. Smith, Frank E. Russell, Edward W. Weber. Delegates to State Society, William H. Purdy, Edwin G. Ramsdell. Chairman Committee on Public Health, Leroy W. Hubbard. Chairman Committee on Legislation, Nathan A. Warren.

The Secretary reported the loss by death of four members during the year and read the following In Memoriams:

THOMAS JEFFERSON ACKER, M. D.

Thomas Jefferson Acker was born in Ossining, Westchester County, N. Y., July 27, 1837. His parents were John Acker and Jane Maria Tompkins whose ancestry dates back to the early Dutch and English settlement of New York and New England.

Dr. Acker received his early education in the district and private schools of his native town and later at Claverack College, New York.

He began the study of medicine in the office and under the tutorship of Dr. George Jackson Fisher of Ossining, N. Y., in August, 1861, and further pursued his medical studies in Bellevue Hospital Medical College, New York City, from which he graduated in March, 1865.

For nearly two years after graduation he was located and practised medicine at Pinesbridge, Westchester County, N. Y., removing to Croton-on-Hudson, N. Y., in February, 1867, where he continued the practice of his profession practically up to the day of his death, February 15, 1914.

Dr. Acker was married in 1866 to Frederica Mason, and had one child, a daughter, both of whom survive him.

He was a member of the County and State Societies and of the American Medical Association, an officer and member for many years of the M. E. Church of Croton-on-Hudson, N. Y. Among social organizations, he was a member of The Improved Order of Red Men and of Colabough Lodge, F. A. M.

The testimony of friends and patients in the community, where for nearly half a century he lived and practiced, tells a story of self-sacrificing labor and devotion in ministering to the ills of others.

What better measure of a man's life than the testimony of those whom he has lived among and served.

NEWTON FREEMAN CURTIS, M.D.

Dr. Newton Freeman Curtis, the son of Jacob and Rebecca Curtis, was born of old New England stock in Hampden, Maine, July 13th, 1849. He received his early training at Hampden Academy and later at Edward Little Institute in Auburn, Maine, from which he graduated in 1867. He took the degree of Bachelor of Arts at Bowdoin College in 1871, after which he acted for a year as principal of Franklin Academy at Franklin, N. H. He received the degree of M.D. from the College of Physicians and Surgeons, New York City, in 1875, and on graduation obtained an appoint-

ment to Charity Hospital, Blackwell's Island. After a brief practice of medicine in New York City, he removed to White Plains, N. Y., where he remained first as assistant and afterwards associate with Dr. H. Ernest Schmid until his health forced him to retire. In 1879 he married Miss Gertrude P. Prendhomme of White Plains. A son and a daughter were born from this union. Dr. Curtis died April 30, 1914, at Milton, Mass., aged sixty-four years. He was a member of the Psi Upsilon Fraternity, the County Medical and some other societies. In years gone by Dr. Curtis was seldom absent from the meetings of this Society, whose interests he faithfully served. He had been President, Secretary, was an active member of committees, a delegate to the State Society, and was a Censor for many years.

#### DR. EDGAR MARTINDALE HERMANCÉ.

Edgar Martindale Hermance, M.D., one of the best-known physicians in Yonkers, who had practiced his profession there for about thirty-four years, died of pneumonia on December 22, 1913, at his home, 217 Warburton Avenue.

He was born at 305 West Eighteenth Street, New York City, January 19, 1854, a son of Rev. John P. Hermance, D.D., of the New York Methodist Episcopal Conference, and Sarah Fields Hermance. His education was received in Wilbraham Academy, Wilbraham, Mass.; Wesleyan University, and the College of Physicians and Surgeons, New York City.

He went to Yonkers soon after graduation from medical college, and began practice. He had been there continuously since then, and had built up a large general practice. He was long actively identified with St. Joseph's Hospital. At the time of his death, and for many years previous, he was Consulting Surgeon at the institution.

The doctor's career in that city was marked by keen interest in public affairs, and he was honored with a number of official positions. He had served as a member of the Board of Education and as President of the old Board of Health, and under Mayor Nathan A. Warren was Commissioner of Public Safety—the first such commissioner that the city had. He was always identified with the Republican Party, and at the time of his death was a member of the Republican City Committee.

Other organizations to which he belonged were the Medical Society of the State of New York, New York Academy of Medicine, the Westchester County Medical Society, The City Club, Athena, Yonkers Lodge of Elks and Nepperhan Lodge of Free and Accepted Masons. Formerly he was a member of the Yonkers Public Library Board, the Good Government Club, and the Yonkers Board of Trade.

Dr. Hermance is survived by his wife, who was Miss Mary Elizabeth Ellerington, a native of Durham, Eng., whom he married eleven years ago; two sons, John Edgar, aged nine, and Henry Fields, aged seven; and a brother, Rev. Fields Hermance, D.D., pastor of St. Paul's Methodist Episcopal Church at Irvington-on-Hudson and, formerly pastor of the Morsemere Methodist Episcopal Church in Yonkers. Dr. Hermance was married three times. His mother died in Ossining in June, 1913; his father died in 1907.

Dr. Hermance formerly was a member of the First Presbyterian Church. Lately, he had been an attendant of St. Paul's Episcopal Church.

#### SAMUEL F. MELLEŒ, M.D.

It is with deep regret that it becomes my sad duty to record the death of Dr. Samuel F. Mellen, one of the oldest and best known members of this Society, who died a few days after an operation performed to relieve a recurrent attack of appendicitis.

Dr. Samuel Fairbank Mellen was born on June 11, 1855, in Natal, South Africa. He came to this country in 1871, and entered Phillips' Academy from which he was graduated in 1874. He graduated from Amherst College in 1878 and from the New York University Medical College in 1884. He resided in Os-

sining from 1886 to 1891 and was very popular there and was the Village Health Officer for a time. In 1891 he entered the State Hospital Service and held the position of assistant physician successively at the Willard, Kings Park and Hudson River State Hospitals. At the time of his death he was in charge of a service of upwards of six hundred patients. In appreciation of Dr. Mellen's services to the State, the Board of Managers adopted the following resolutions.

"At a meeting of the Board of Managers of the Hudson River State Hospital held August 15, 1914, the following resolution was unanimously adopted and ordered spread upon the minutes of the Board.

"It is with feelings of profound sorrow that we are called upon to record the death of Dr. Samuel F. Mellen, a member of the medical staff of this Hospital. Dr. Mellen had been in the service of the State in various institutions for the care of the insane and had filled all such positions with great credit to himself. By his skill and sympathy he did much to add to the comfort and to alleviate the suffering of those who came under his care.

"Dr. Mellen was connected with the Hudson River State Hospital for fifteen years and it can be truly said of him that during his entire service his interest in the welfare of the institution and its patients never slackened. He was always faithful in the performance of his duties and gave freely of his time in season and out of season to the care of his charges. His probity of character and well-poised judgment, combined with medical experience, of a high order, won for him the confidence and esteem of his associates.

"The sudden death of Dr. Mellen has left a void in our ranks which it will be difficult to fill. We deplore our loss and extend to his bereaved family our deepest sympathy.

Be it further resolved that this resolution be published and that a copy be sent to his relatives."

Dr. Mellen was of a most amiable and kindly disposition. He always had a cheery word and a hearty handshake for everyone. He had a wide circle of friends and acquaintances and it could be truly said of him as of few men that, "None knew him but to love him."

Again, he had a very equitable disposition and his temper remained unruffled even under the most trying circumstances. His manners were quiet and refined and he was both sociable and literary in his tastes. He was endowed with a strong character and held the highest moral and religious principles. He was a faithful attendant upon the deliberations of this Society and seldom missed a meeting. It, assuredly, will not be too much to say that Dr. Mellen will be greatly missed from among us and that in his death we have sustained the loss of a valued friend and loyal fellow-member.

And even though we mourn the loss

Of one so kind and true,  
Yet ever will his influence live  
To cheer both me and you.

The Scientific Session consisted of the following papers, followed by general discussion.

"Brief Report on the Aims of the State Department of Health," LeRoy W. Hubbard, M.D., Mt. Vernon, Sanitary Supervisor Westchester and Putnam Counties.

"Twilight Sleep (Dammerschlaf) in Obstetric Practice," Samuel J. Druskin, M.D., New York City. Samuel J. Scadron, M.D., New York City.

#### MEDICAL SOCIETY OF THE COUNTY OF MONROE.

ANNUAL MEETING, ROCHESTER, DECEMBER 15, 1914.

#### BUSINESS SESSION.

The following officers were elected for the ensuing year:—President, Owen E. Jones; Vice-President, Frederick W. Seymour; Secretary, Charles W. Hennington; Treasurer, Charles C. Sutter. Censors, Eugene H. Howard, John F. W. Whitbeck, Charles R. Witherspoon, Albert C. Snell, George G. Carroll. Dele-

gates to State Society, Wesley T. Mulligan, William D. Ward, Owen J. Jones, Alternates, Norris G. Orchard, Clayton K. Haskell, Eugene H. Howard, Milk Commission, Seelye W. Little, Joseph R. Culkin.

Following the business session an address was given by the retiring President, A. C. Snell, Rochester.

#### CHENANGO COUNTY MEDICAL SOCIETY.

110TH ANNUAL MEETING, AT NORWICH, DECEMBER 8, 1914.

##### BUSINESS SESSION.

The following officers were elected for the ensuing year:—President, Edward Danforth, Bainbridge; Vice-President, Alpha R. Morse, Oxford; Secretary, Paul B. Brooks, Norwich; Treasurer, James B. Drake, Norwich.

Albert H. Evans, Guilford, was elected Censor, to succeed Dr. Anna White-Marquis, whose term had expired. Paul B. Brooks was elected to succeed himself as Delegate to the Medical Society of the State Society. Lewis E. Dixon, South New Berlin, was elected to membership in the Society.

A letter was read from Dr. Wende, President of the State Society, calling attention to the need for activity relative to medical legislation. The President reapointed the present Standing Committee on Legislation, consisting of D. A. Gleason, John V. Jacobs and Albert H. Evans, and also appointed as a special committee to act with the Legislative Committee, Philetus A. Hayes, Alpha H. Morse and Thomas F. Manley, with the Secretary, Paul B. Brooks, as ex-officio member.

The question of bringing to trial one Gordon, a chiropractic, under indictment for practising medicine illegally, was discussed, and it was decided to leave the matter to the discretion of the Board of Censors they being authorized to proceed if they deemed such action advisable.

A letter was read from the Commander of the Salvation Army, asking co-operation in securing old linen and other material suitable for making surgical dressings to be sent to Europe for use by the Red Cross forces. The Secretary was authorized to fix a day for "Old Linen Campaign Day," and to send material on the subject to the county newspapers, the Society to defray the expense of transportation of material contributed.

It was voted to hold the next semi-annual meeting at Greene, upon the invitation of the Greene physicians.

##### SCIENTIFIC SESSION.

"Radiotherapy," Jacob J. Levy, M.D., Syracuse.

"Some Observations of the Rational Treatment of Diabetes Mellitus Based on Laboratory Study," William A. Groat, M.D., Syracuse.

"Emergencies," Ralph H. Loomis, M.D., Sidney.

"Urinalysis," Lewis A. Van Wagner, M.D., Sherburne.

"Some General Observations," Paul B. Brooks, M.D., Norwich.

#### MEDICAL SOCIETY OF THE COUNTY OF HERKIMER.

ANNUAL MEETING, at HERKIMER, TUESDAY, DECEMBER 1, 1914.

##### BUSINESS SESSION.

The following resolution was adopted:

"Resolved, That the Board of Supervisors be requested to appropriate a sum of money sufficient to erect and establish a County Tuberculosis Hospital."

"The Committee on Legislation was instructed to oppose certain bills which it is anticipated will be re-introduced at the coming session of the Legislature."

The following officers were elected for the ensuing year: President, Emerson W. Rude; First Vice-President, James W. Graves; Second Vice-President, Charles J. Diss; Third Vice-President, William P. Earl; Secretary, A. Walter Suiter; Treasurer, George Graves. Censors, Charles H. Glidden, chairman; Harry H. Halliwell, Albert D. Chattaway, Arthur W. Albones, Irving S. Edsall. Librarian, William B. Brooks.

An address on Infant Feeding was delivered by the

President Augustus B. Santry, M.D., Little Falls, which was followed by a general discussion.

#### COUNTY OF ROCKLAND MEDICAL SOCIETY.

ANNUAL MEETING, AT NEW CITY, DECEMBER 2, 1914.

##### BUSINESS SESSION.

The following officers were elected for the ensuing year: President, Samuel W. S. Toms; Vice-President, William R. Sitler; Secretary, J. Howard Crosby; Treasurer, Arthur K. Doig. Delegate to State Society, George A. Leitner; Alternate, Charles D. Kline. Censors, John Sengstacken, Eugene B. Laird, Gerrit F. Blauvelt, Daniel J. Sheehan, Ralph DeBaun. Committee on Legislation, George A. Leitner, John C. Dingman, Merton J. Sanford. Committee on Public Health, Charles D. Kline, Eugene B. Laird, Carlyle P. Hussey.

One new member was elected.

The annual dinner was served and twenty-eight sat down to table.

#### MEDICAL SOCIETY OF THE COUNTY OF CHEMUNG.

ANNUAL MEETING, AT ELMIRA, DECEMBER 15, 1915.

##### BUSINESS SESSION.

The following officers were elected for the ensuing year: President, Charles F. Abbott, Elmira; Vice-President, Richard H. V. Dann, Elmira; Secretary, Clyde L. Carey, Elmira; Treasurer, Herbert W. Fudge, Elmira. Censors, John C. Fisher, LaRue Colegrove and Emma LaFevre. Delegate to State Society, Arthur W. Booth, Elmira; alternate, Charles Haase, Elmira. Chairman of the Committee on Public Health, Charles G. R. Jennings, Elmira. Chairman Committee on Legislation, Robert P. Bush, Horseheads.

##### SCIENTIFIC SESSION.

Report of the 1914 meeting of the Sixth District Branch, Oscar J. Bowman, M.D., Horseheads.

"Hydrotherapy at Saratoga Springs," John C. Fisher, M.D., Elmira.

Address by the President, Russell B. Lynn, M.D., Elmira.

#### MEDICAL SOCIETY OF THE COUNTY OF CHAUTAUQUA.

ANNUAL MEETING, AT JAMESTOWN, TUESDAY, DECEMBER 8, 1914.

The following officers were elected for the ensuing year: President, Fred C. Rice; First Vice-President, A. Wilson Dods; Second Vice-President, James H. Kellogg; Secretary, J. William Morris; Treasurer, George F. Smith. Censor, Morris N. Bemis. Delegate to State Society, Vernon M. Griswold; alternate, George W. Cottis.

On motion, duly seconded and carried, the following amendments to the By-Laws were adopted:

Section 1, Article 3—Insert the word "and" after the word "Secretary" and before the word "Treasurer" so the paragraph will read: "The officers of this Society shall be a President, First Vice-President, Secretary and Treasurer."

Amend Section 3, Article 9—"The meetings of this Society shall be held on the second Tuesday in December and the last Tuesday in March, June and September.

At the close of the Business Session a very enjoyable dinner was held which was followed by the

##### SCIENTIFIC SESSION.

President's address, George F. Smith, M.D., Falconer, N. Y.

"Abdominal Caesarian Section," with report of cases, Irving W. Potter, M.D., Buffalo, N. Y.

"What is the Normal Position of the Uterus," C. F. Goldborough, M.D., Buffalo, N. Y.

"Malnutrition in Infants, and Its Treatment," Frank E. Brundage, M.D., Buffalo, N. Y.

"The Eighth District Branch," President Arthur G. Bennett, M.D., Buffalo, N. Y.

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# NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

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## EDITORIAL DEPARTMENT

### THE GENERAL PRACTITIONER.

**A** POSSESSION of the requirements to practice medicine conscientiously is becoming more exacting day by day. From the research laboratories, where salaried scientists labor untrammelled by the need of seeking a livelihood through the stress and uncertainties of private practice, from the clinicians with the advantage of hospital experience, from specialisms in the varied branches of medicine, come an added finesse in diagnosis, treatment and technique which when impressed upon the mind of the general practitioner causes surprise and engenders a feeling of doubt regarding his personal capability.

The older practitioners whose instructions in pathology, bacteriology and hæmatology were, at the best, incomplete, labor under a great disadvantage. Of the younger practitioners it is regrettable but true, it is a rule rather than an exception that after leaving college or hospital they fail to develop their elementary knowledge of medical microscopy, or ignore it altogether. This is due in part that on becoming engaged in private practice they experience a sense of isolation and lack of that inspiring association and environment which lessen the enthusiasm so provocative to ambitious endeavor. The man of today who wishes to be a physician in the true sense of the word must be a student endowed with love for his work. One can be well endowed mentally, another moderately so, yet the importance of this quality of the mental development in each is of no great moment, but plus the student type endowment we at once recog-

nize their relative value. It is the possession or non-possession of this student strain that marks the distinction between the progressive and the indolent, between the successful and unsuccessful physician. This faculty of application is sometimes over-developed, and instead of the logician we have the faddist, whose thinly spun theories have no substance. Excluding as unworthy of consideration the mentally indolent—often commercially active—considering only the practitioner desirous of extending to his patient the best attainable medical skill, we recognize that he is beset with many difficulties in applying his knowledge. What with preventive medicine, municipal charities, contract practice and religious aid societies, the income of all physicians is suffering a diminution year by year. This loss falls most heavily upon the general practitioner, yet the portion of this loss is small in comparison to the one he sustains by his neglect to take advantage of opportunities to increase his general knowledge, to prevent the unnecessary invasion of the specialist into his field of labor. The word specialist has now become so trite in the public vocabulary that the sick diagnose their conditions and right or wrong consult a specialist in accordance with their own diagnosis. To combat this tendency it is necessary on the part of the general practitioner to qualify himself so that he can impress his patients with the belief that he is capable of treating all general diseases or at least that he is qualified by his general knowledge to designate the proper special treatment demanded.

The exigencies of practice today demand knowledge, skill, equipment, and business

acumen. The practitioner does himself an injustice in enriching the specialist to his own impoverishment. Conscience must be the arbiter of his retaining or refusing a case. Let us, for example, exemplify this contention by selecting two common pathological conditions, which would ordinarily come under the care of the practitioner, yet which require special skill and knowledge on his part. A patient presents himself and volunteers the statement that he has an attack of "indigestion"; that after eating he feels a sense of fullness in the stomach; has eructation of gas, sour regurgitation, sometimes vomits, pain in the stomach at indefinite intervals after eating, constipation, headache, pain in side and under shoulders; sudden and severe attack of pain in the belly, etc., etc. It was not long since that after the repetition of such symptoms, a look at his tongue, a test of his pulse, questions regarding his habit of life, character of diet, addiction to liquor, etc., etc., he would be given advice, a diet slip and a simple prescription probably calling for pepsin and some bitter tonic. Today so incomplete an examination of a patient presenting symptoms of gastric or hepatic disarrangement would be considered not only negligent but approaching mal-practice.

The competent physician will now devote great care in eliciting and recording such a patient's history and that of his family, the clinical symptoms objective and subjective; put leading questions to bring forth symptoms considered unimportant by the patient, after which a physical examination is made, a test meal ordered, followed by a clinical and microscopical examination of the stomach contents, fæces and blood, and an X-ray exposure. This procedure may not be necessary in all cases, but it demonstrates the thoroughness of the examination necessary to determine the solution of "indigestion" symptoms. How many practitioners give such attention to the casual office patient in comparison to the number who still continue to treat such in the old routine manner until the patient's money is exhausted or he enters a hospital to have a correct diagnosis of gastric ulcer or gall-bladder disease, made by an interne? We fully realize that the patient who will not submit to the annoyance and expense of scientific treatment by the practitioner, willingly does so under the care of a specialist. Therein lies one of the difficulties of the practitioner. He must of necessity have a knowledge of *what is*

*really necessary* to be done. When located in a city one difficulty is surmounted by having at his command the specialist in pathology, yet his patients grumble at the added expense which to them appears out of relative proportion to what he pays to his attendant who he thinks ought to be able to make such examination himself. (We are referring to patients of moderate means, as the rich usually seek the specialist and the very poor hospital aid.) The second patient presents himself with the assertion that he has "A little touch of the gleet," which he would like to have cured in as short a time as possible, as he contemplates marriage—having no realization whatsoever of the importance of the insignificant urethral secretion which he expects to disappear in a few days' treatment. Here, again, as in all other cases, a thorough recorded history of the case is necessary, followed by an examination of different specimens of urine, chemically and microscopically, massage of the prostate, cystoscopic and endoscopic examination, the application of sound and irrigations, and indefinite treatment. Formerly these cases were, and by many still are looked upon as trivial in character—for diagnosis an inspection—for treatment an injection. Today its true importance is realized. To be qualified to treat gleet one must be a good microscopist and an expert in the use of the cystoscope and endoscope. If he is not, he is in duty bound to refer his cases to a genito-urinary specialist, to his own loss and prestige. So it goes through the whole gamut of diseased conditions.

The foregoing homely illustrations show the requirements demanded of the general practitioner if he desire to be honest with himself, just to his patients, and retain his clientele, which, with present competition, he must do to survive. Personality, sympathy and friendship, the former admired charms of the family doctor, possess indeed a value, but present-day intelligence views them as nothing compared with skill. We do not claim that the practitioner should or could become expert in all diseases, but for his own welfare he should become efficiently so in the more common ones which fall under his notice. We are not writing in a critical mood; on the contrary, we believe the general practitioner to be the under dog in the fight and our sympathy goes out to him; but in the concrete will you not agree with us that the percentage of practitioners qualified and properly equipped to diagnose and treat dis-

ease is not in the majority, or are our observations at fault? One annoying feature is that patients have been educated into paying by the visit and not by the services rendered. They seem willing enough to pay the demands of the specialist, but not those of their attendant. They are satisfied to pay two, three or five dollars, whether they receive five or fifty minutes' office attention. How much better our work would be if we saw a less number of patients and received adequate compensation. It is worthy of note that the wealthy can secure the best special skill, the poor the same in hospitals and dispensaries, but the great intermediate class possessing the pride of independence finds it difficult to pay large fees.

Scientific medical treatment is exhaustive and painstaking, and that is what we owe to our patients.

One of our reasons for writing this article is to broach the idea of the possibility of the Department of Health widening the scope of its bacteriological laboratory and adding to its list of gratuitous examinations of diphtheria, typhoid fever, rabies, anterior poliomyelitis tuberculosis, syphilis and gonorrhœa, that of the blood, urine, fæces and tissue for diagnostic purposes. We believe the object of the Department of Health is to prevent disease. Sickness is destructive to general industry. In preventing sickness we add to the general industry of the state. If the efficiency of the medical profession can be improved by the department coming to its assistance in performing gratuitously these pathologic and bacteriologic examinations for the poor and the relatively poor, the public, patient and physician are alike benefited.

#### COMMENTS ON THE SCIENTIFIC PROGRAM OF THE 109 ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

**T**HE Scientific Program for our coming meeting in April is practically complete. A few modifications in the details alone remain to be considered.

It was at first contemplated to have papers presented by prominent scientists from abroad, but subsequent events—deplorable wars—prevented this desired possibility. Your committee confesses to a momentary feeling of disappointment, but the home talent secured is of such a high character that you will feel amply compensated for the non-presence of foreign celebrities.

Two innovations in the program are worthy of your attention.

The first is the establishment of a section on syphilis. This was determined upon at the May meeting of the Council. It was felt that a disease affecting all classes of society—dwellers in palaces as well as dwellers in hovels—a disease which had spread devastation in all lands almost as destructive as tuberculosis but more horrible in its physical aspect, deserved the recognition of such a scientific body of men as those constituting the Medical Society of the State of New York. The evolution and phases of this disease will be presented by recognized authorities in this special branch of medicine. A symposium has been arranged embracing co-related subjects which will attract the interest of members engaged in other distinct lines of practice. The subject will not be considered from the genito-urinary standpoint but as a subject of universal application.

The second innovation introduced by the Committee on Scientific Work is not technically a part of the program.

In view of the rapid development and complicated problems concerning Preventive Medicine in its relation to modern life, it was decided to arrange for a series of public lectures to be given by eminent and popular speakers on this and other topics of interest involving public health. These lectures will be given in the afternoons and evenings. The general public and members of the teaching fraternity will be invited. It is thought that these discourses will serve the double purpose of imparting knowledge and bringing the medical profession into a closer intellectual relationship with the public in general. The special subjects designed for the general public will not interfere with the purely medical and surgical program as each will have a specially printed list of subjects following in natural order. It has been the steadfast purpose of the committee to prevent the programs becoming too long in order that there might remain sufficient time for a proper discussion of each paper. To this end the length and number of the papers have been strictly limited. While certain gentlemen have been asked to take part in the discussion, let it be understood that they are open to all and it is not only expected but desired that the members present will show their interest by their participation.

THOMAS H. MCKEE, M.D., *Chairman.*

## RECENT PROGRESS IN OPHTHALMOLOGY.\*

By EDGAR S. THOMSON, M.D.,  
NEW YORK CITY.

THE consideration of the present question, which must perforce be in outlines only, omits all reference to the extra-ocular muscles and to the great advances in the treatment of glaucoma through the newer operations, as these subjects are presented by other essayists.

Certain points involved in sero-diagnosis and treatment are becoming increasingly important to ophthalmologists on account of the large number of obscure cases of keratitis, scleritis and uveitis met with in practice. Tuberculosis is doubtless a much more frequent factor in these conditions than has been heretofore supposed. Tuberculin has, of late, been extensively employed and while the reasons for its use have been largely deductive, it cannot be denied that the accumulation of favorable evidence is so large that we are justified in speaking rather positively as to its value. The cases may be, presumably, divided into two classes: first, those with definite local tubercular lesions, and, second, metabolic disorders dependent upon latent tuberculosis somewhere else in the general system. There is no question but that tuberculin injections are a great benefit in both classes of cases. Our routine procedure is to begin with the Von Pirquet cutaneous test, making three scarifications, one of which is inoculated with pure tuberculin, the other with 50 per cent tuberculin, while the third is left as a control. Should the reaction be positive and other diagnostic tests, particularly the Wassermann, be negative, we proceed at once to administer the injections. That the reaction is of considerably more value in children is admitted, but it is also a fact that when it is positive in an adult the injections frequently are beneficial. It is generally considered that a negative reaction absolutely excludes tuberculosis as a factor. The diagnosis of a local tuberculosis is not complete without the local reaction, or increase of hyperæmia in the inflamed tissue of the eye, which must be secured by hypodermic injection of a large dose of tuberculin, but as this is frequently followed by fever and constitutional disturbance, it is not possible to give it unless the patient can be in the hospital, where he can be put to bed and the reaction watched. It is therefore usually omitted in our clinical practice. Having determined to begin the injections, we use the bacillary emulsion prepared by the New York Board of Health, which consists of one part dried, pulverized tubercule bacilli in 200 parts of water, to which are added 100 parts of glycerine. One minim of a 1/10,000 solution is given and increased 2 m. every two days until 10 m. are given. Then 1 m.

of a 1/1,000 solution is given and increased in the same way, until the full dose is reached, which is indicated by slight fever and swelling and redness at the site of the injection. Once the reaction is secured, the injections should be either markedly reduced or altogether intermitted for a time, to be resumed again if it seems desirable. The results are often very gratifying. Certain cases clear up slowly and the injections must be continued for some weeks, or even months, but this can safely be done while the general condition of the patient remains good. Many cases improve very much in general health, gaining in flesh and strength and color; in fact, if this improvement in the general health does not take place, the injections are of doubtful value. If the general health shows the least sign of declining, the injections should be stopped.

The Wassermann reaction in syphilitic affections of the eye is very useful. Many forms of specific affections are well marked in their character, but others are not. In all cases it is satisfactory to have the confirmation, for the positive Wassermann is an almost certain evidence in acute inflammation that the local condition is specific, and in such cases the administration of salvarsan or mercury and iodides is followed almost invariably by satisfactory results. The negative Wassermann is of less value, for it must be remembered that certain cases, whether from treatment or other causes that we do not know, will show a negative reaction which is later followed by a positive one. Also there are certain cases of specific spinal disease which show a positive reaction only in the spinal fluid, while the blood is negative. To this class belong certain cases of optic atrophy associated with specific disease of the central nervous system, and it follows that a negative blood reaction means nothing in this connection without a negative spinal fluid. The positive reaction, it will be seen, is of considerably more value than the negative one, and, given an obscure case of choroidal, retinal or nerve inflammation in the early stage, if the reaction is positive we can confidently look for improvement in the condition, if anti-specific treatment is vigorously pushed.

The question of gastro-intestinal autointoxication as a cause of certain eye diseases has been studied carefully by Elschmig, de Schweinitz, and others, for several years past. Not much has been accomplished in the way of definitely isolating the toxins, nor even of actually proving the existence of the condition, although elaborate chemical tests have been made by de Schweinitz, and were reported at the 17th International Congress in London, 1913. It is impossible to be positive upon this subject, and yet the clinical results of care in diet are so good that there is a very strong feeling today that the condition frequently exists, even though it seems difficult to prove it. The practical point

\* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.



of importance lies in the treatment of certain cases of uveitis. My own plan is to exclude the more definite toxic agencies, as syphilis and tuberculosis, and then to have the digestive system carefully studied, and any irregularity, when found, is corrected. This is usually a matter of a careful examination of the stomach contents, the circulation, and the excretions (urine and feces); in other words, a careful examination of the patient's metabolism is made. It is surprising how frequently apparently hopeless cases will clear up under this line of treatment, and leaving all questions of theory aside, the practical results justify the work.

The question of the influence of sinus disease on ocular conditions has been somewhat modified since it was first taken up some four or five years ago. At that time it was stated by certain writers that a great variety of conditions, iritis, irido-cyclitis, choroiditis, etc., was caused by disease of the ethmoid and sphenoid sinuses. Further experience seems not to bear out this view. The cases of direct involvement of the eye from sinus disease are relatively uncommon and seem to be restricted largely to certain forms of optic neuritis caused by extension of inflammation from the sphenoid, either through a localized periostitis or by the direct pressure on the nerve as it passes in relation to the sphenoidal sinus. Optic neuritis from this cause is sometimes of very low degree, and may even give no ophthalmoscopic appearances, and be manifest chiefly as a functional disturbance, with diminution of vision or central scotoma. In optic neuritis of this type, or in any case of obscure causation, the sphenoid should always be opened. Ordinary examination of the nose usually leads to no information of importance, unless there is, indeed, so much evidence of widespread sinus disease as to make it probable that the sphenoid is involved along with the rest. In cases of isolated sphenoid disease, however, in which the optic nerve is affected, drainage is abolished and the only way to tell whether sinus disease exists is to open the sinus. In the hands of a skillful rhinologist, this is not a serious procedure, and when a diseased sinus is found and drained, the results are excellent. If the inflammation of the nerve has not progressed too far, so that atrophy has set in, complete recovery of function will occur.

The use of dionin should, perhaps, receive mention, for although it has been known for some time, its acceptance by the profession at large is within a comparatively recent period. It is made by the action of ethyl iodide on morphia, and is actually ethyl-morphine hydrochloride, a fine, white, crystalline powder, odorless and with slightly bitter taste, and soluble in about seven parts of water. When even a one per cent solution is instilled into the cul-de-sac, a sharp reaction takes place. The conjunctiva becomes red and oedematous and the lids swell. A considerable amount of extravasated

serous fluid may be seen under the ocular conjunctiva. A certain amount of smarting accompanies the reaction, which lasts usually fifteen minutes to half an hour, although the smarting is usually evanescent. The effects of dionin are those of an analgesic and lymphatic stimulant and its value is most marked in cases of uveal disease accompanied by venous stasis. Cases of iritis or irido-cyclitis, whether of the traumatic or idiopathic varieties, are markedly benefited by its use. The pain is relieved and subsidence of the inflammation occurs more rapidly. It is best to begin with a one per cent solution, which is used once, or perhaps twice, a day, as long as the reaction following its use lasts. When the reaction no longer occurs, the strength should be increased to two per cent, and later to five per cent, or even ten per cent. For a single sharp, depleting effect upon the iris and ciliary body, especially during the early stages of an iritic attack, it is good practice to dust a small quantity of powdered dionin into the cul-de-sac, which produces a sharp reaction and frequently relaxes the muscular tissue, so that the after course of treatment is rendered much easier. It is useful in certain chronic diseases of the cornea, especially in the deep varieties. Interstitial keratitis is markedly benefited by its use. The pain usually ceases and the duration of the disease is apparently much cut down. Dionin has a certain marked value in the treatment of opacities in the cornea through its lymphagogue action. In very old opacities, where nothing but scar tissue exists, it is, of course, useless, but a certain amount of inflammation exists in the neighborhood of corneal scars for some months, after all acute inflammatory symptoms have subsided, and there is reason to believe that these infiltrates are absorbed by the use of dionin so that, unless the opacity of the cornea is some months old, it is well to try its effect. My own practice is to use it in almost every case of old opacities, where there is the smallest chance for improvement, and it is surprising how many such cases improve under its use. Its use has also been advocated in glaucoma, and certain of the deeper forms of uveal disease, but here its value can hardly be said to be established. Dionin is apparently harmless. In spite of the sharp reaction that occurs, no permanent after effects have been noted; in fact, the reaction seems necessary, and it is a mistake to in any way seek to modify it. I am of the impression that in advanced cases of uveal disease, accompanied by diminution of intra-ocular tension, its use is somewhat hazardous, as I have observed several cases where dionin was used in such soft eyes and where the inflammation was apparently increased.

The selective destruction of tissue by radiant energy is becoming more established and the application of either X-ray or radium is done with more judgment and skill. At the present time the value of radium over the X-ray remains to

be proved, and the great expense of radium is somewhat of a bar to its general use. However, as this whole subject is surrounded by so much mystery and as so much remains to be worked out, it suffices to say that the chief established value of either lies in their undoubted power to destroy malignant epithelial tissue where direct applications can be made. Cases of destruction of sarcoma have been reported, but the ray must be applied directly, and it follows that in orbital growths nothing has been accomplished on our present lines of treatment. Both X-ray and radium seem to have a certain value in reducing exuberant conjunctival tissue, but their superiority over other modes of treatment has not been proved to be sufficiently great to give them great prominence as yet.

Several operative procedures should be mentioned, not so much on account of newness as for the place they have come to occupy.

*Excision of the lachrymal sac* has come to have a very decided place. The operation is not a new one, but has passed through many phases to reach its present status. It is indicated when any chronic inflammation of the sac exists that is unrelievable by other means in a reasonable period of time. The sac alone should be removed, as in the vast majority of cases the gland gives no trouble and the watering which persists is but slight. Moreover, the removal of the gland, as originally advocated, is not without danger. A few cases of atrophy of the optic nerve have been reported from orbital hemorrhage following removal of the lachrymal gland. It is necessary, therefore, if the gland be removed, that all hemorrhage be checked before the wound is closed, and that any large bleeding vessels should be tied up with catgut. Removal of the sac is accomplished by an incision roughly following the fold and extending high enough to give access to the top of the sac. Cutting the canthal ligament seems to be followed by no especially bad effects, although it is a good principle not to cut the tissue high up any more than is necessary. The operation may be done under local anæsthesia by injection of one per cent cocaine solution, to which has been added about  $\frac{1}{4}$  part of 1/1,000 adrenalin solution. This is injected, first, into the subcutaneous tissue from below upward, then going deeper on both sides of the sac into its center. The operation should be at once begun, so as to secure full benefit of the anæsthesia, and also to avoid, through the local bleeding, any possible toxic effects. The skin and fascia are rapidly divided and the sac exposed. It is then isolated from its surroundings more by tearing with the blunt point of the scissors than by cutting. It is finally divided low down and at its canalicular attachments. The lachrymal nasal duct is curetted for a short distance down so as to secure complete obliteration and the wound is closed with silk sutures. The canaliculi are not sealed up and give no further trouble. Smooth healing is much facili-

tated by the application of a small pressure pad over the wound, so as to press the tissues together.

#### EXCISION OF THE TARSUS.

This operation, which has come to have a very valuable place in the treatment of certain stubborn forms of trachoma, was advocated by Heisrath in 1882, and much developed by Kuhnt later. There are two methods of performing the operation, one by excising the tarsus, the other by removing, in addition to the tarsus, the conjunctiva in the cul-de-sac. It is chiefly of value in cases that have passed into the stage of pannus, with marked thickening of the tarsal conjunctiva and incomplete resorption of the trachoma follicles, and in which relapses threaten to endanger the vision by long continuance of the corneal trouble. Excision during the primary stage of follicle formation is not, in the writer's opinion, justifiable, as there is always a possibility that fairly normal conjunctiva may be secured through expression or astringent treatment. Where, however, the case has gone on to a thickening that endangers the cornea, then either the simple excision of the tarsus should be done or the "combined," by removing also the retro-tarsal fold. It was originally feared that this sacrifice of the tissue would be followed by further contraction and obliteration of the cul-de-sac, but this has been found not to be the case. If all thickened tissue is removed, no further contraction takes place, and the corneal process quiets down and does not, as a rule, relapse. It is hardly necessary in this place to describe the technique of the operation, which is well known, but it should be mentioned that the thickened tarsal tissue seems to be the active influence in keeping the corneal complications alive and that it is necessary to remove all except a strip of tarsus about  $1\frac{1}{2}$  mm. wide at the lid margin, in order to secure the best results. We follow usually the technique described by Beard (*Ophthalmic Surgery*, p. 362, *et seq.*), except that the sutures are carried entirely through the lid, and tied over pieces of gauze on the skin surface. Two very satisfactory results of the operation should be emphasized. They are mentioned by writers on the subject, but frequently lost sight of. One is the entire relief of the trachomatous ptosis through the contraction of the lid, and the other is the relief of the attendant trichiasis. After the tarsus has been removed the fragment which remains no longer turns in, and the lashes, instead of turning toward the cornea, resume their normal position.

The use of the conjunctival flap in sealing up wounds of the cornea and sclera should be mentioned. It is an old procedure, but has found slow acceptance, and is still not done as frequently as it should be. All penetrating wounds of the corneal margin that are not manifestly infected should be covered by a conjunctival flap, after any protruding iris has been carefully

trimmed away. The method followed is unimportant as long as the flap of conjunctiva is brought in contact with the raw surfaces of the wound. My own plan is to take up a triangular flap, dissecting it so as to allow it to stretch easily, then anchoring it to the sclera on the opposite side of the corneal wound in such a way that the wound may be covered. It adheres rapidly and the redundant folds of conjunctiva retract in the course of a few days, leaving the wound thoroughly sealed against infection and against the absorption of permeable substances, which we have every reason to believe takes place in these cases. Several excellent papers have been written on this subject lately and it seems unnecessary to say more in the present connection. The author wishes to record his opinion that it is a serious mistake to allow any marginal wound, especially if iris is incarcerated, to run through a slow course of healing without this valuable protection which is so easily and safely supplied.

#### EXTRACTION OF SENILE CATARACT.

Of recent years several radical changes have been attempted in the treatment of this condition, the most notable being intra-capsular extraction, which has been so successfully done by Major Henry Smith, of India. A good deal has been written on the subject by American operators and some good results have been secured, but the operation has not as yet supplanted the regular method. The technique is difficult, and without a highly developed operative skill, vitreous is exposed, if not lost, and serious complications are endangered. The other new procedure was devised by Dr. Homer Smith, of Norwich, New York. He performs a preliminary capsulotomy on the morning of the day of the extraction. A knife-needle is entered into the anterior chamber and the capsule is divided by a crucial incision, the object being to allow the aqueous to find its way into the lens substance, and loosen up the cortex so that when the extraction is done, the same afternoon, all of the cortex can be delivered. The status of this procedure is still sub-judice, and the author has had no personal experience with it. Several operators who have done it have been pleased with the results.

In the cataract operation which is regularly performed at the present time, several points have come to be well established. In the preliminary examination of the patient the evidences of arterio-sclerosis in all its bearings should be carefully gone over. The blood pressure should always be taken, and if this is high, say 180 mm., as the result of a temporary condition, some attempt should be made to reduce it before the operation is performed, both on account of the danger of choroidal hemorrhage and secondary inflammation. Patients with increased blood pressure seem not to have good

reparative processes. If the pressure is of long standing, and if arterio-sclerosis exists, the danger is not so great, though greater, of course, than if arterio-sclerosis did not exist, and attempts to lower the blood pressure are useless. The best means of lowering the blood pressure are the administration of the nitrites, carefully restricted diet, and rest in bed.

A conjunctival flap should always be used in making the incision. This is not new, but has been done more and more of late years. It slightly complicates the further technique of the operation, but secures rapid healing, with very much lessened chances of immediate infection, and secondary infection, in that it helps to avoid inclusion of the iris. The first dressing may then be done the following day, a point of decided advantage. In certain cases, where cortex may be anticipated, the use of the capsule forceps is undoubtedly of advantage. These forceps are made with two or three teeth on each blade, so that when placed in contact with the anterior surface of the lens, a large piece of anterior capsule may be seized and torn out bodily. The delivery of the lens is then facilitated with the delivery of the cortex, and secondary membranes are probably avoided. It is not the practice of the author, however, to use the capsule forceps in every case. Cases in which the lens is thoroughly mature, and where we have reason to believe that sclerosis exists, the ordinary method of capsulotomy is satisfactory. Several methods of delivery of the lens in its capsule have recently been attempted, but, so far, none of these have found general acceptance. The cortex is delivered by means of spoon pressure as formerly, or, where large masses exist, by gently inserting a Daviel spoon, and spooning it out. In certain cases, where the patient rolls the eye upward during attempts at delivery of the lens, the method of fixation advocated by Angellucci has an undoubted value. The speculum is removed and the tendon of the superior rectus muscle is grasped with a pair of broad forceps, and the eye is rotated downward, while an assistant holds the lower lid down by gently drawing it away from the eyeball with the finger laid on the orbital margin. It is, as a rule, difficult, under these circumstances, for the patient to squeeze out vitreous, so that, if this method is carefully applied, delivery of the lens can be more safely accomplished.

Of late, the importance of the prevention of blindness has been felt more and more, and the work has been taken up by a number of organizations. The New York Committee for the Prevention of Blindness, the Russell Sage Foundation, has been in existence about six years, and has assisted in organizing about ten state societies by sending exhibits and lantern slides around the country, as well as in other ways. The Committee of the American Medical Association is also doing active work, in which the educational feature, through the public press, is

especially good. The New York Committee, whose territory is mainly New York State, has been actively engaged in investigating ophthalmia neonatorum, both as to the use of prophylaxis and the period of diagnosis. About one-half of the cases which develop this disease in New York City are in the hands of the midwives, and the committee is at present interested in the question as to the advisability of some regulation of the practice of midwifery. It is very difficult, however, for them to get proper reports of these cases, and it is to be hoped that some systematic method of reporting and investigating will be taken up by our Board of Health, as is done in Boston, Cleveland, and some foreign cities, notably Liverpool. The committee has also obtained some statistics with regard to the prevalence of industrial accidents, but this has not been deemed so urgent a matter, on account of the new liability laws which have forced the installation of safety devices. The question of poisoning by wood alcohol is undoubtedly a very important one. It is used in making drugs, in certain industries, as shellacing the inside of beer vats, where the fumes may be absorbed, and in certain cheap liquors, where poisoning is frequently the result. The committee has reported these cases to the district-attorney, and is making efforts to get a labelling law through, by virtue of which every drug containing wood alcohol may bear a poison label, warning the purchaser of its dangers. They hope ultimately to secure the passage of a Federal law prohibiting the sale of rectified wood alcohol or even prohibiting its rectification. The work in connection with trachoma is mainly through co-operation with the trachoma clinic of the Health Department, and in educational leaflets for distribution.

Work has also been done toward improving lighting conditions in co-operation with the Society of Illuminating Engineers. The importance of all this can scarcely be over estimated, and it is clearly our duty as ophthalmologists and as public-spirited citizens to assist this committee in every possible way in the prosecution of their most valuable work.

#### *Discussion.*

DR. J. GARFIELD DWYER, New York City: The writer considers that Doctor Thomson has touched upon some of the most important points and ones that it is well for all of us to keep in mind in our daily work. Most ophthalmologists are pretty well agreed that the progress of ophthalmology in the future will not be along operative lines, but will be probably along the lines of specific therapy and the investigation of the etiology of those more or less obscure fundus conditions whose names, such as retinitis, choroiditis, etc., really cover our want of knowledge of the causes and prevention of such conditions; in fact, in the great majority of these

cases all we can do is to diagnose the condition present and then see the case progress to its termination, in spite of what we do, empirically. Thus the diagnosis of such conditions is easy, but there has not been much progress respecting etiology and specific treatment.

There are, however, two conspicuous exceptions to the foregoing, and that is in the treatment of and the scientific diagnosis of syphilis and tuberculosis. With regard to the former, there are certain practical points of importance that must be borne in mind, especially with regard to the scientific diagnosis, and certain errors to be avoided. The two scientific means of diagnosing syphilis are by means of the luetin reaction and by means of the Wassermann reaction, the latter being the more widely known and used. A positive Wassermann reaction means, in most cases, that we are dealing with a syphilitic lesion; a few advanced cases of tuberculosis, the disease known as yaws, leprosy, some cases of cancer, and a few other rare conditions give a positive reaction and thus lead to confusion, but, generally speaking, the average case that gives a positive reaction is syphilitic. A negative Wassermann does not by any means exclude syphilis, and it is here that the importance of being sure under what conditions the blood to be tested is obtained. It is well known that alcohol will mask a positive reaction; that blood drawn under an anæsthetic, or after prolonged anæsthesia, will be negative, whereas, under ordinary conditions, it may be positive. Again, the administration of mercury will interfere greatly, so much so that until the mercury is out of the system, the reaction does not mean anything and is simply so much lost time. Potassium iodide, so far as is known, does not interfere. Then, in seeing if the treatment is effective, we must wait some time after the injection of salvarsan or mercury, until time for the elimination of the medicine has been given. Again, in fundus conditions, or in any nerve lesion of the central nervous system, we should not rest content with a negative Wassermann on the blood, but should be sure that the cerebro-spinal fluid is also negative. This applies to diagnosis as well as to control tests after treatment, as it is well known that the blood may be negative while the cerebro-spinal fluid is positive. Again, it is well to bear in mind that where we are morally certain that we are dealing with a syphilitic affection, and the blood is negative, that the administration of a provocative dose of salvarsan will often make the blood positive and clear up the diagnosis. Most men are now agreed that the neo-salvarsan is not as good, therapeutically, as the old salvarsan; at least, that seems to be our experience, and we have now gone back to the old salvarsan.

With regard to the other disease mentioned, tuberculosis, a few practical points from the laboratory standpoint will not be out of place. Practically nobody now uses the Calmette reac-

tion, but the von Pirquet and the subcutaneous use of the old tuberculin is coming more and more into use. The younger the patient, the more reliable is the von Pirquet reaction, so we now only attach importance to the positive reaction in very young children, that is in children generally not over five, and some now place no confidence in any over one year old. However, a negative reaction is a good guide at any age, and we can often get some guide in the intensity of the reaction, each case being really a law unto itself. The subcutaneous test is the best and most reliable. We are beginning to realize that tuberculosis conditions of the eye are far more common than thought of before, and according as our methods of diagnosis are improved, we will probably recognize that it is very widespread. With regard to the progress in the treatment of these conditions of tuberculosis, the medical papers are full of reports on the use of tuberculin in such conditions, and accordingly, as we are getting a better insight into the limitations of tuberculin, we are getting better results.

Just a few words may be said as to the results obtained from the use of vaccines in the infections of the eye. The writer has been treating certain eye infections for the last five years with autogenous vaccines and he thinks this method of treatment is vastly superior to some of the means now employed. Very often an organism can be isolated from ulcers and good results obtained from the use of vaccines. Time is too short to go into the details of this method of treatment.

Would it not be worth while to make a systematic study of such conditions as choroiditis, retinitis, neuritis, etc., examining the patient in every way, regarding the possible sources of infection, regarding localized irritation of the sympathetic nervous system, the condition of the teeth, and all such, to see if we could not in some way find out just what is the cause of these conditions. Some of our fundus conditions resemble in many ways localized areas of infection, and maybe along these lines something may be done.

MISS CAROLYN VAN BLARCOM, Executive Secretary, Committee for the Prevention of Blindness: Dr. Thomson has mentioned the work which is being carried on in New York State for the prevention of blindness and the conservation of vision, and has referred specifically to wood alcohol, ophthalmia neonatorum and the midwife problem as the subjects receiving most attention at present.

*Wood Alcohol.*—Concerning wood alcohol, the members of this audience know even better than I how serious a menace this poison is to life and sight if swallowed or inhaled, and, many believe, if absorbed, but probably only those who have made a fairly careful study of the subject have any idea what formidable opposition is en-

countered in attempting work for the prevention of wood alcohol poisoning.

Briefly, this opposition represents the wood alcohol interests, which consist of about 100 wood distillation plants in the United States, representing an investment of more than \$25,000,000, and giving employment to about 75,000 people.

Until wood alcohol was rectified, there were comparatively few cases of poisoning resulting from its use, but now that it is made to closely resemble grain alcohol, its use as a substitute for this highly taxed product is evidently growing to be more and more general. As a result, we find that one woman, for instance, buys paregoric in a New York City drug store and is permanently blinded because the paregoric is made of wood alcohol. Another buys Jamaica ginger, with the same results. An Italian mother, preparing for her daughter's wedding, buys all the necessary ingredients and prepares a cordial for the wedding feast after an old and much used Italian recipe. Some of the guests die and others are made ill because the woman has been sold wood instead of grain alcohol.

You are all familiar with these cases and know that in the majority of them, those who have paid the heaviest possible penalty have not been guilty of any wrong-doing, nor even of carelessness, but they have unwittingly bought and used a deadly fluid in utter ignorance of its poisonous nature.

Still more tragedies are found in the industries where inexperienced men are given wood alcohol varnish to use on the inside of storage vats and in other enclosures which are not adequately ventilated.

It has seemed to the Committee for the Prevention of Blindness that most of the tragedies which now result from wood alcohol poisoning would be averted if wood alcohol, no matter how highly rectified nor under what name sold, were invariably labelled poison, if every substance containing wood alcohol were also labelled poison, if it were made unlawful to use any form of wood alcohol in any article of food or drink intended for use by man, and also if wood alcohol were more generally replaced in the industries by denatured alcohol.\* In those industries where denatured alcohol containing benzine cannot be used, it is possible to obtain a "specially denatured" alcohol which is benzine-free.

For the purpose of securing an invariable use of the poison label, the Committee drafted a bill and had it introduced before the last session of the legislature. This bill was supported by the staffs of the New York Eye and Ear Infirmary, the Manhattan Eye, Ear

\* In 1906 a Federal law was enacted permitting the manufacture and sale, tax free, of "industrial alcohol," as it is commonly called, consisting of ninety parts of grain alcohol, ten parts of wood alcohol, and one-half of one part of benzine, or pyridine.

and Throat Hospital, the Herman Knapp Memorial Eye Hospital, the New York Post-Graduate Medical School and Hospital, the Ophthalmological Section of the Academy of Medicine, the Physiological Laboratory of the College of Physicians and Surgeons of Columbia University, the American Association for Labor Legislation, the United States Brewers Association, the New York State Pharmaceutical Association, the New York State Commission for the Blind, and the various associations and schools for the blind throughout the state, several trade unions, barber supply dealers, the Committee on the Blind of the National Council of Jewish Women, the Russell Sage Foundation, the Association for Improving the Condition of the Poor, the Federation of Women's Clubs of the State of New York, the State and City Commissioners of Health and the State Commissioner of Labor, and a large number of oculists, lawyers and other interested individuals. In all probability it would have become a law but for the powerful opposition which quite evidently emanated from the interests.

The opposition was not willing that wood alcohol used in the industries should be labelled poison. But this was considered by its sponsors one of the important provisions of the bill, for if wood alcohol varnish were always so labelled, the workmen using it would know how to protect themselves by securing adequate ventilation.

Another objection advanced was that the invariable use of a poison label on wood alcohol might interfere with the horse liniment trade.

Since this bill failed to become a law, it would seem that the way to prevent blindness and death from wood alcohol poisoning, for the present at least, would be to continue to give publicity to the danger of using this product, and for those who come in contact with cases of blindness to urge the victims to institute damage suits. Employers, druggists and liquor dealers would be very careful of their use of wood alcohol if they found themselves involved in a law suit whenever they were responsible for a case of poisoning.

That these suits can be successfully prosecuted is shown by the case of William Degelman, who lost his sight while varnishing the inside of vats in the Uhlman Brewery, in Brooklyn, and who recovered \$12,000 damages, the case being settled out of court. Another case, that of Gustav Kenz, also a varnisher, at the Bernheimer-Schwarz Brewery, was settled for \$4,500. This case, however, has been appealed.

More than this, if cases of wood alcohol poisoning were reported to the local Department of Health, or district-attorney, with a suggestion that a civil suit be brought, much would also be accomplished.

These are much needed services which members of the medical profession may lend in the

work for prevention of blindness from this cause, in addition to their actual care of the patient.

Investigations are made, articles written and papers read on the subject of wood alcohol, but comparatively little has actually been done to prevent the poisoning.

It would seem as though enough were known to warrant vigorous action along the lines suggested on the part of all who are interested; that is, continued publicity and warning, and the institution of damage and civil suits in all cases of blindness or death resulting from this poison.

*Ophthalmia Neonatorum.*—In regard to ophthalmia neonatorum, I, as a lay worker, can only tell you, as doctors, what we are trying very hard to accomplish in popularizing and spreading medical knowledge concerning the disease.

We all know that ophthalmia neonatorum is not really very common—about one case out of every 200 births—and that the cases of blindness from this cause are still less frequent. But each case is so pathetic and is so nearly always the result of sheer carelessness and neglect that even the small number occurring annually in the city and state of New York are a reproach to society. There seems to be fairly definite agreement that we would practically have no blindness from ophthalmia neonatorum if all babies' eyes were first bathed and then treated with some derivative of the silver salts, and if, in addition to this, all babies' eyes were watched and were given speedy and skillful medical treatment upon the appearance of symptoms of ophthalmia.

The investigation which this Committee and others have made lead one to the conclusion that practising physicians, as a whole, do not unflinchingly observe these two precautions. For instance, it was recently found, upon investigation of 108 cases of babies' sore eyes, reported from the various eye clinics in New York City to this Committee, that 62 were physicians' cases, 43 were midwives' and 3 were emergencies attended by neighbors. Only 14 of the 62 physicians had used a prophylaxis, and 9 of the 43 midwives took this precaution. Of 11 cases in which injury resulted from the infection, 6 babies lost one eye, 2 eyes were scarred, while 3 infants became totally blind. The cases of total blindness all occurred in the practice of doctors, who had prescribed home treatment, leaving the details of execution to the mother or a neighbor. In addition to this, 6 of the remaining cases in which partial injury occurred, were in the hands of doctors and 2 in the hands of midwives. The midwives were much more apt to advise early hospital treatment than were the physicians.

The value of educational work in this connection is suggested by the fact that 68, or more than half of the 108 cases investigated,

were taken to eye hospitals upon the initiative of 'lay persons who had heard that it was dangerous to neglect babies' sore eyes.

Much the same conditions are disclosed by other investigations, not only in New York but elsewhere. There is no dearth of knowledge concerning the etiology, prevention and treatment of ophthalmia, and yet these cases continue to occur. It is now several years since the popular movement for the prevention of blindness was started and yet the reports from schools for the blind throughout the country show no diminution in the number of children blind from ophthalmia neonatorum admitted annually to these institutions. Year after year the percentage is about 25 per cent. Nor do the reports from eye hospitals bear out the belief of some individuals that ophthalmia neonatorum has been practically wiped out. During the last fiscal year 96 cases were treated in New York City eye hospitals and clinics and it is quite certain that there were many unrecognized, untreated cases in addition.

Probably the most determined and effective work which is being done in this country to save the sight of infants with infected eyes is being done by the Social Service Department of the Massachusetts Eye and Ear Infirmary, in Boston, and yet the following figures, taken from their Sixth Annual Report, show a surprising number of cases and a large percentage of resultant injury during the past year. There were 142 cases under observation and of these 23 were made blind or partially blind. This rather looks as though the underlying cause has not been reached even in Boston. All but 10 of the 142 cases reported upon were cared for by physicians or in hospitals. In this instance, as in others which might be quoted, it is the doctors who have been at fault and not midwives or nurses.

The inevitable conclusion reached is that not all is being done that might be accomplished in view of the amount of available information. Possibly knowledge upon this subject is not as thoroughly disseminated as it might be by the medical schools, for it is the doctors at large who have it in their hands to prevent blindness from ophthalmia neonatorum and yet it is the doctors at large who seem to be generally responsible for this preventable disaster.

It goes without saying that the members of this audience are not the delinquents. They are the sight-savers. But the army of general practitioners who casually handle obstetrical cases and particularly the young, not highly trained and not over scrupulous practitioner who recruits his patients from among the very poor, are the ones who through ignorance or neglect, or both, swell the army of the blind year by year. It is to correct this that we, as

lay workers, look to you, the teachers and leaders in the medical profession.

To sum up, it is evident that if we are to prevent needless blindness among babies we must secure first, the invariable use of a prophylaxis at birth; second, the recognition of the early symptoms; and third, provision for both prompt and efficient medical care for ophthalmia neonatorum cases. It would seem that this would go back to the teaching in the medical schools, for no amount of legislation or education of public opinion can help the individual baby if the attending physician is negligent.

*Midwives.*—As to midwives, the subject is too many-sided and far-reaching to be dismissed in a few words. I can only say that those of us who have been interested in infant welfare are convinced that we have no right to stand by and allow the present conditions to continue if there is any possible way of correcting them.

Women of one sort or another who call themselves midwives are attending about 40 per cent of the births throughout this country both in urban and rural communities. These women for the most part are unfit to attend even normal and uncomplicated cases in their utter ignorance of surgical cleanliness, hygiene of pregnancy and the puerperium, conduct of normal labor and the ordinary nursing care of infants. Doctors and nurses are carefully taught to safeguard and care for babies and obstetrical patients, but the majority of our midwives not only work great harm because of their unclean and superstitious methods, but do untold damage by daring, in their ignorance, to attend abnormal cases.

The United States is apparently the only up-to-date country that has failed to recognize the influence of the midwife for or against public health. Summarizing the legal provisions for the control of this profession in America, we find that midwives are actually allowed by law to practice unrestricted in thirteen states,\* while in fourteen† there are no state laws relating in any way to their training, registration or practice.

In the remaining twenty-one states, and in the District of Columbia, where there are laws relating to midwives, it is required in twelve,‡ and in the District of Columbia, that they shall pass an examination before receiving from the state a license. In six states§ midwives are restricted to attendance upon normal cases. In seven¶ the statutory provisions are irregular

\* Arizona, Arkansas, Florida, Georgia, Idaho, Kentucky, Maine, Mississippi, New Mexico, South Carolina, Tennessee, Vermont, West Virginia.

† Alabama, California, Delaware, Massachusetts, Michigan, Nebraska, New Hampshire, North Dakota, Oklahoma, Oregon, Rhode Island, South Dakota, Texas, Virginia.

‡ Connecticut, Illinois, Indiana, Louisiana, Maryland, Minnesota, Missouri, New Jersey, Ohio, Utah, Wisconsin, Wyoming.

§ Illinois, Maryland, Missouri, New Jersey, Ohio, Wisconsin.

¶ Colorado, Iowa, Kansas, Montana, Nevada, North Carolina, Washington.

and so meagre as to be practically without effect. In New York and Pennsylvania the legislature of 1913 enacted laws which will make possible the adoption of a satisfactory system of licensure, registration and control uniformly throughout these states.

Surely midwives should be either eliminated entirely or the status of the profession should be raised and its members reduced in number by allowing only trained women to practice and by providing for very intelligent and careful supervision of even these trained women in their practice. This would, of course, carry with it the elimination of the obviously unfit, and should the time come when complete elimination seemed advisable, this could best be accomplished after the profession had been recognized and its members made known to the proper authorities. Under present conditions, we have only approximate ideas as to how many are practising, and what they are doing, but the details of their work that come to light from time to time suggest a mediæval condition that we have no right in this period of enlightenment to ignore.

Happily, a beginning has been made toward raising the status of the midwife profession in this country. There is an admirable little training school for midwives on East 26th Street, which is being conducted under the auspices of Bellevue Hospital. This school, the only one of its sort in America of which we know, is the result of the combined efforts of the President of the Board of Trustees, the General Superintendent of Nurses of Bellevue Hospital and the Committee for the Prevention of Blindness. The course of training, six months in length, includes instruction in anatomy and physiology of the pelvic organs; hygiene of pregnancy and the puerperium; preparation for and conduct of normal labor; symptoms of complication or abnormality during pregnancy, labor or the puerperium; surgical technique; care of the sick room; preparation and serving of meals; care and feeding of infants, with special reference to the care of the eyes and infant hygiene.

Although six months' course is admittedly too short a time in which to fit an untrained woman to act as a midwife, and although the course as at present given has departed somewhat from the original plan, the graduates of this school have already commended themselves to social workers and obstetricians because of the good nursing care they give to their patients and, what is of still more importance, because they attempt only normal deliveries and send for a physician upon the appearance of any of the symptoms they have been taught to recognize as danger signals.

Still better than the Bellevue School is a proposed school for midwives in St. Louis to which only graduate nurses will be admitted

as pupils. The standing of Dr. Fred Taussig, the obstetrician who, with some of his colleagues, is making plans for the establishment of this school, insures the high character of the instruction which will be given and of the fitness of the pupils to be graduated. The group of physicians working for this school in St. Louis see in the trained midwife of intelligence a valuable assistant in the work of saving life and health among mothers and babies.

Very active interest in this matter of midwife training and control exists also in North Carolina, while in several other states the seriousness of the situation is being recognized among obstetricians, ophthalmologists, health officers, nurses and others engaged in public health work.

Legislation which will provide for the standardization of midwife schools, which we hope will be established from time to time in New York State, and will place them under the control of the Board of Regents will, in all probability be undertaken next winter.

Through the recently reorganized State Department of Health it is probable that there will be inaugurated a system of supervision and control of midwives throughout the state, excepting New York City and Buffalo, such as has not previously been put into operation in this country.

Training, examination and supervision of midwives will not cure all the evils at present attributed to that profession any more than the training and licensing of doctors, nurses, lawyers, etc., can wholly protect the public against exploitation by unworthy members of those professions. But these legal provisions are the first necessary steps toward the elevation of any profession. We should not put them off any longer in the case of the midwives, for while we delay, mothers are being consigned to permanent invalidism and babies are being maimed and blinded.

## THE PRESENT STATUS OF SQUINT AND OCULAR MOTOR IMBALANCE.\*

By HERBERT WRIGHT WOOTTON, M.D.,  
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IT is exceedingly difficult, even at the present day and after careful consideration of the important additions to the literature of muscular anomalies that have been contributed during recent years, to define accurately their present status. Although ophthalmologists may be said to be more in accord at present than in the past in regard to a number of points of difference formerly widely mooted, the present status of these anomalies still depends to a great extent upon the viewpoint and

\* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.



personal experience of the individual surgeon. In the limited space of the following paper, I shall restrict myself to the consideration of concomitant strabismus and latent muscular errors and I shall endeavor, while expressing my own views on these subjects, to give proper prominence to the views of others with whom I may be, to some extent, at variance.

#### CONCOMITANT STRABISMUS.

As to the importance of refractive errors in the etiology of these deviations, there is no difference of opinion, and their discussion will accordingly be dismissed as superfluous. In regard, however, to the character and origin of the amblyopia which so frequently accompanies them, a marked divergence from the generally accepted opinion of fifteen years ago has gradually arisen. The earliest theory, that the amblyopia exists from birth and is one of the important factors in the etiology of the deviation, was at first supported by von Graefe but later abandoned by him in favor of amblyopia ex anopsia. Still later, however, he was compelled to return to the earlier hypothesis which he supported until his death, and until quite recently amblyopia ex anopsia occupied a decidedly dubious position in the minds of most ophthalmologists. Of late, however, it has again assumed a position of prominence, due largely, I think, to the writings of Mr. Claud Worth and his investigations of the fusion sense. At the present time, it may perhaps be said that many, if not most, ophthalmologists believe in the existence of amblyopia ex anopsia, resulting from the squint and not directly concerned in its causation. The question is fraught with difficulties and space does not permit of its discussion. Its investigation is encompassed by errors which I believe have misled a number of observers. For my own part, I consider the prevailing theory as far from proven, and I still regard the amblyopia as congenital and as a primary factor in the etiology of most cases of strabismus.

With the more general adoption of the theory of amblyopia ex anopsia and of its relation to the fusion sense, exercises having for their object the restoration of the fusion sense have naturally assumed an increased importance which is conceded by many and is urged with enthusiasm by some. My own experience with these measures has not convinced me of their extreme utility. A squint, which is progressing towards cure by means of glasses may possibly be assisted in this direction by stereoscopic exercises and the most logical and most convenient instrument for this purpose is undoubtedly the amblyoscope of Mr. Worth, but I have yet to be convinced that in such cases a cure would not have resulted from the glasses alone and, when I have failed to restore binocular vision by glasses or operative pro-

cedures, I have never yet succeeded in securing it by means of the stereoscope.

#### OPERATIVE TREATMENT.

In regard to the surgical treatment of concomitant strabismus, it can not be said that any general agreement has as yet been reached, although the tendency during the past ten years has unquestionably been towards the more frequent performance of advancements and shortening operations at the expense of the previously almost universal tenotomies. The choice of operation should depend first upon the nature of the muscular anomaly in so far as this can be determined, secondly, upon the relative degree of amblyopia present, and lastly, though by no means least, upon the cosmetic result likely to ensue. In considering the subject from these viewpoints, it will be convenient to discuss first the operative treatment of divergent strabismus.

In regard to their underlying muscular anomaly, cases of divergent strabismus may be classified broadly under two headings, first, those due primarily to an insufficiency of convergence usually associated with myopia and exceedingly rare in this city; secondly, those due primarily to a divergence excess, usually associated with hypermetropia either in one eye or in both, and constituting by far the larger number of cases seen in New York.

The treatment of the first class should unquestionably consist in an advancement of one, or more generally of both interni according to the degree of convergence insufficiency present, and upon this method of procedure I think most ophthalmologists are agreed. Generally speaking, the results are excellent and, as the resulting disfigurement even if it persist is for the most part hidden by the internal commissure, the cosmetic effect is usually pleasing. If a complicating divergence excess should still, as is however unusual, cause a divergence during distant vision which does not ultimately disappear, there is nothing left to do but to tenotomize an externus with the possibility that convergence of the visual lines will result.

In typical cases of the second class, those due to a divergence excess, the power of convergence is retained, in spite of the wide divergence of the visual lines which is present when the subject gazes at distant objects. In such cases, advancements of the interni are contraindicated and it is, I think, owing to a lack of appreciation of this fact and to the great preponderance of cases of this type, that the surgical treatment of divergent strabismus is regarded as unsatisfactory by many ophthalmologists. The correct procedure, which in general is eminently satisfactory, consists in a free tenotomy, first of one externus and, later, of the other should this, as is usually the

case, be necessary. If, after the correction in this manner of the divergence for distance, the case should prove to be of a mixed type and divergence at near points should still be persistently present, it will be necessary to advance an internus, with the possibility, however, that some over-correction may result.

*Convergent Strabismus.*—The treatment of cases of convergent strabismus which have persisted after the prolonged employment of the correction of the refractive error has been, and still is, a subject of controversy. Those of us who believe that the strabismus persists largely on account of the fact that the divergence function is in abeyance due to a secondary atrophy of the externi can see no logic, *theoretically*, in any treatment other than an advancement of these muscles to the corneal margin. In selected cases, the results in regard to binocular fixation and binocular vision leave nothing to be desired and the absence, generally speaking, of all fear of an over-effect with subsequently increasing divergence is a great comfort to the operator. Were it not necessary, as has already been stated, to take into consideration the relative degree of amblyopia and the cosmetic effect likely to follow, the advancement of both externi would seem to solve, for many of us, the problem of the operative treatment of convergent strabismus. These factors are, however, of the utmost importance and should not be disregarded in determining the operative procedure to be employed. A double advancement depends for its success in the first place upon faultless technic, and this can not always be guaranteed. Apart from the personal skill of the surgeon, dull needles, a broken suture, or a suture insecurely placed may rob the operation of its advantages. It is also necessary to keep both eyes bandaged for a week, and the resulting reaction is occasionally, though not often excessive. Another important disadvantage consists in the fact that an advancement sometimes causes a more or less permanent, yellow blotch at the site of operation, which extending to the corneal margin is a visible disfigurement and much more noticeable than that sometimes observed after advancement of the interni. Again, as an advancement causes a slight recession of the globe, its result in the case of eyes already deeply set is far from pleasing. It follows, I think, that this operation should be employed only in those cases in which the vision of the squinting eye is sufficiently good to render probable that a serviceable degree of binocular vision will result. If the squinting eye possess vision of only 20/200, for example, as opposed to 20/20 in the eye that fixates, it is useless and unnecessary to expose the patient to the pain, inconvenience and possible danger of a double advancement, or the surgeon to the

trouble of its performance. In such cases, a single or double tenotomy, having for its object a slightly under correction of the deviation would seem to be the proper procedure. It is true that divergence will, in all probability, be the ultimate result, but divergence may also ensue in such cases after a double advancement. When the eyes are deeply set, advancements should not be performed. They are exceedingly difficult, and the cosmetic result is not good. In cases, even with no great degree of amblyopia in the squinting eye, it seems to me that a single or double tenotomy, leaving a slight under-correction and causing the eyes to advance slightly, is, all things considered, the best procedure. In spite of all that has been written on the subject of binocular single vision and not contesting for one moment its great desirability, it must, I think, be admitted that, largely on account of the interest associated with its discussion, its importance in the ordinary affairs of life has been somewhat exaggerated. With one eye capable of accurate fixation while the other, although amblyopic, still serves to increase the lateral field, a man is able to perform all the visual tasks ordinarily required of him, and education, in the limited field in which binocular vision should exist, is a satisfactory substitute for the absent function. It is only in exceptional cases that cosmetic effect should be endangered in an attempt to restore binocular vision. It not infrequently happens, however, that the restoration of binocular vision, or at least of binocular fixation, combined with an excellent cosmetic effect can be obtained by the advancement of both externi. This is the case when the amblyopia is not too disproportionate, that is to say when the squinting eye has vision of at least 20/70, when the globes are fairly prominent, when the technic is perfect, and when the operation does not leave a noticeable disfigurement at its site. Under these circumstances, an advancement of both externi, as advocated by Landolt, gives a better immediate result and a greater hope of permanency than any other method.

#### LATENT ANOMALIES.

The nomenclature first suggested by Dr. George T. Stevens of this city has achieved an almost universal adoption, not only in this country but in Europe. This has been due largely to its brevity, although the advantage in this respect of "exophoria," for example, over "latent divergence" amounts to but seven letters. Moreover, as Duane has so well pointed out, Steven's classification is purely static. What we really wish to ascertain is the muscular error as expressed in dynamics. For this reason, it is much more important to determine whether an exophoria is due to a convergence insufficiency or to a divergence

excess, than merely to ascertain that an exophoria exists. Exophoria is the symptom, so to speak, while convergence insufficiency or divergence excess is the disease. Since the recognition of latent anomalies by American surgeons almost to the present time, a controversy, at first exceedingly active and not without acrimony has been waged concerning their frequency, importance and treatment. Today, it is, I think, admitted except by a few that, while their importance was at first overestimated, a certain, limited number of these anomalies do occasion symptoms apart from the refractive errors with which they are for the most part associated, and that they do at times require treatment directed to their relief. In my own opinion there are ordinarily but three, or possibly four, of these conditions which may demand recognition after the correction of the accompanying refractive error. The first is the exophoria due to an insufficiency of convergence, which may be relieved or temporarily cured by prismatic exercises or improvement of the general health but which, when persistent, necessitates the advancement of one or both interni. The second is the esophoria due to a divergence insufficiency. This condition is incapable of improvement by prismatic exercises and, should relief fail to follow prisms for constant use, requires for its cure an advancement of one or both externi. The third comprises *some* cases of hyperphoria which, when slight in degree, may be alleviated by the constant wearing of prisms and, when more marked, may require tenotomy of a superior rectus. The fourth is the exophoria due to a divergence excess, but this condition is usually associated with hypermetropia and very generally ceases to give trouble after the refraction has been corrected. Occasionally, however, this muscular anomaly still causes transient diplopia and threatens to pass over into divergent squint. When this is the case, tenotomy of the externi is indicated and can generally be performed without fear of convergence resulting.

In regard to the esophoria due to a convergence excess, the muscular error so frequently associated with hypermetropia, I have never met with an example in which the asthenopia did not disappear with correction of the refractive error, and I am absolutely opposed to operative procedures, tenotomies of the interni, in these cases. An esophoria of this nature may be said to be a normal accompaniment of an uncorrected hypermetropia, and it gradually disappears, or ceases to give trouble after the restoration of the proper balance between accommodation and convergence. These are the cases that were attacked so vigorously and so injuriously during the early stages of our knowledge of latent anomalies, which were credited by some

with the causation of serious general diseases, and the injudicious surgical treatment of which did so much to bring our muscle work into disrepute. We have all in the past seen cases with an uncorrected hypermetropia of as much as 2 D. in which tenotomies had been performed upon the interni followed by troublesome asthenopia or even actual divergence and diplopia as the direct result of the insufficiency of convergence thus produced. Happily, tenotomies are no longer performed in such cases, except by a few, and it is to be hoped that their employment will become even less frequent in the future. I am willing to admit that a congenital anomaly, such as a faulty insertion of an internus too near the cornea, may occasion an esophoria due to a convergence excess independently of hypermetropia and necessitate a tenotomy for its relief, but in practice I have yet to encounter such a case.

It remains to consider briefly the treatment of divergence following tenotomies of the interni for convergent strabismus. The tenotomized muscle or muscles should be advanced to the corneal margin, often a difficult procedure, but one unattended by danger of an over-correction. If performed before a complicating divergence excess due to contracture of the externi has supervened, the result is often exceedingly good. If after the restoration of the converging power, divergence should still persist during distant vision, tenotomy of an externus is the only resource remaining. Convergent squint, which is usually, however, slight in degree, may be the result.

#### *Discussion.*

DR. ALEXANDER DUANE, New York City: I feel sure that amblyopia ex anopsia does exist, but doubt whether it is very frequent. Otherwise orthoptic treatment ought to be more uniformly successful.

Treatment of squint is of three kinds: refractive, orthoptic, and operative.

Refractive treatment is always to be applied first and should be carried on with sufficient thoroughness and persistence—a fact often lost sight of. Such treatment may be successful even in adults, although the more likely to succeed the earlier in life it is applied. In general until this is done the question of operation should not be considered. The exception to this rule is formed by cases in which there is a large element of insufficiency or actual paresis, especially congenital paresis, affecting either the lateral or vertical muscles. In such cases, which are by no means rare, operation is usually the only effective remedy, although even here any refractive element should first be eliminated by the steady use of the proper glasses.

Orthoptic treatment is properly used after

the refractive treatment has had at least some chance to show what it will do. It consists in four steps, one or all of which applied in the following order may be necessary according to circumstances: (a) teaching the squinting eye to fix and training its vision by bandaging or atropinizing the good eye; (b) teaching both eyes to see simultaneously (recognition of diplopia with red glass); (c) teaching both eyes to acquire binocular single vision in whatever position they can do so (training with amblyoscope, stereoscope and prisms adjusted to suit the patient's deviation); (d) teaching both eyes to get straight and to see single when straight (converging or diverging exercises with amblyoscope, stereoscope, and prisms; bar reading). Orthoptic exercises are sometimes useful for correcting squint; still more useful as a preparation for operation and to reinforce its effect.

In the matter of operative treatment I agree in general with Dr. Wootton. In a marked convergence excess not yielding to prolonged use of glasses and with little divergence insufficiency or insufficiency of the externi, I have little fear of a tenotomy of the interni—secondary divergence being not very common and being easily remedied. When there is a primary or secondary insufficiency of divergence or of the externi, advancement or resection of the latter is required. In the treatment of the different forms of divergent squint I quite agree with Dr. Wootton, although in divergence excess I find I have to make the tenotomy of the externi very thoroughgoing and even then not seldom have been disappointed by an insufficient effect. An overeffect I have seen but once in my own practice and that in a case of re-operation. Either before or after operating for lateral squint any vertical deviation should be removed; otherwise our results will be likely to fail.

Dr. S. BUSBY ALLEN, Patchogue, L. I., said he would differ as to patients losing the benefits of prism exercises. Having used them for years with accurate records he has found that the benefits are permanent and that clear single vision is maintained if the orthoptic treatment has been carried far enough to secure muscular balance.

Dr. WILLIAM H. BATES, New York City, announced that the cause of amblyopia and squint was psychic and was curable by eye training without operation. Photographs of two cases were submitted. The first was that of a young girl who had amblyopia in both eyes. The right externus was completely paralyzed, the left partially paretic. The child was cured by the mother, a farmer's wife, after a year of eye education. The second case was that of a young woman with divergent vertical squint. Her physician, by eye training, cured her in six weeks.

## PRACTICAL VACCINE THERAPY.

By HORACE GREELEY, M.D.,

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IT is presumed that every physician who employs vaccine therapy understands that the procedure aims to develop special systemic digestive power over the infectious agent represented in the vaccine; and, furthermore, that unless the vaccine be prepared from the proper organism—that responsible for the diseased condition under treatment—the whole procedure will fail of its object and will probably even do harm, since the enforced elaboration by the body cells of enzymes which can only serve to digest the successive doses of vaccine injected, and which can have no power over the infecting agent, must detract from the ability of these body cells to produce other enzymes, specific for the infection, so essential to check or to eradicate the existing disease. Not only is this true when the wrong species of organism is employed in a vaccine, but even with a bacterium so like another as to be indistinguishable by ordinary cultural, staining and microscopic examination-methods it happens that unknown peculiarities of composition or construction constitute a difference so radical biologically as to prevent immunity processes, aroused against the one, from being effective against the other. Such factors as these have been recognized particularly in connection with infections by members of the cocci family, streptococci or pneumococci, for instance, of which a number of distinct strains have been recognized, and the well known differences, so important in treatment, among meningococci.

Commercially these considerations find recognition in the "polyvalence" advertised to be possessed by various brands of stock vaccines which, by the way, usually means nothing more than that they are composed of stock of a given species the seed for which was obtained from several sources. Such polyvalence no more insures biological differences than if, in an effort to gather a sack of mixed potatoes, we should include a handful from each of several states, all of which might turn out, upon close examination, to be of the same variety. Even if one of these preparations should by an accident include an organism identical with the one active in the diseased process under treatment, the remainder of the vaccine—much the largest portion—could only act as a serious handicap to the body's reactive powers.

Thus, even after the variety of an infectious agent has been determined, we are confronted with the difficulty of fixing the strain which can only definitely be decided by serological investigations that compare the organism in question with standard cultures of determined strain—which, of at least some bacteria, seem to be obtainable of more or less fixed characteristics. One important step in such a process requires comparison of the clumping properties of the

respective bacteria when exposed to a series of sera from animals immunized to all important known strains, so that the technical difficulties are apparent.

All such questions are avoided when the vaccine employed is autogenous, and since there is rarely any difficulty in securing from a patient a culture of the guilty organism, it is hard to see why any other than an especially made vaccine is ever used. If one should be told that a patient had fever and a sore throat he would not without investigation recommend diphtheria antitoxin, and yet when an attempt is made to treat an infectious process through use of a stock vaccine the procedure is far more of a guess at random, particularly when no bacteriological diagnosis is made. Should the latter be attempted, the work would be as great in all cases as that involved in the preparation of an autogenous vaccine, and when more exactness be required than is needed to name the organism manipulated in evolving the autogenous preparation, the difficulties and expense are multiplied many fold.

The autogenous vaccine procedure secures in short order—48 hours—a suspension of organisms of the same variety and strain as the patient's, and even though in some instances exact bacteriological identification of the infecting agent be in doubt, this cannot effect the results, which depend alone upon, first, the usually easy task of finding the responsible germ, and then, of careful vaccine preparation, followed by a common sense directed course of injections.

The cost of an autogenous vaccine—usually \$5—prepared in quantity greater than would ever be used, can never exceed that of a stock vaccine, when a sufficient amount of the latter is purchased for a course of six weeks to two months—a period which is hardly above the minimum in which any definite result could be expected in a chronic infection, that class in which alone such agents can be conservatively employed.

It has been claimed that good results have attended the use of vaccines in pneumonia, and in various acute processes, but, although there is some explanation of possible good through the assistance of the local reaction at the point of injection *when this occurs*, which, I think, will be only in such cases as have already got the upper hand of the infection, I cannot believe that the evidence so far at hand justifies the risk of injuring the systemic reactive mechanism through the addition of an amount of specific protein at a time when the production of special enzymes may be comparatively so low that serious results might follow the temporary reduction in their amount, which always follows the introduction of vaccine.

The use of tuberculin in marked and in advanced cases of tuberculosis, for a similar reason, is apt to more often harm than benefit, especially since, in such cases, one reaction will probably

be followed, as an echo reverberates in a cavern, by a series of others, not necessarily of diminishing violence.

To obtain good results from the use of vaccines, common sense must be used in the selection and treatment of cases, as no one properly and clearly the subject of surgery or specific therapy should have the clearly indicated denied. For instance a pyuria indirectly due to a lacerated perineum or, perhaps, to a bladder stone; necrotic glands; abscesses; furunculosis complicating diabetes; syphilitic sequelæ; and all the like must first, at least, have special indications fulfilled before even thinking of vaccine therapy as possibly appropriate. With such reservations, when bad habits have been broken and generally hygienic living assured, any persistent chronic infection, of whose agent a vaccine can be made, is both suitable and amenable to the process of measured active immunization.

After an autogenous vaccine has been prepared the question arises as to how much shall be given at the first dose. Here the prime consideration is what would happen if, by any chance, we should give too great a quantity and produce a painful and debilitating reaction, as may sometimes follow. Even if such possible consequences be not seriously harmful to the patient, the eventuality would tend to discourage both his and the physician's confidence.

With the exception of one or two pathogenic bacteria that give rise to appreciable amounts of soluble toxins, to which specific antitoxins have been prepared, no organism by its mere presence in the body—in anything short of such numbers as would mechanically effect—is capable of exciting serious symptoms. It is only when the system becomes what is known as sensitized to the particular germ that such manifestations arise. This sensitization consists in the production of sufficient specific enzyme to attack and make soluble, digest, such an amount of the particular bacterial substance as will suffice to effect our susceptible tissues; and, as when a proteolytic enzyme is feeble and present in particularly small amounts there is a tendency for the proteolysis produced to become arrested in the earlier stages, at albumose or peptone, which substances are known to produce the symptoms most characteristic of infectious disease, the manifestations of sensitization are adjudged to depend upon such partial digestion of the bacterial protein.

Theoretically, of course, the proper amount of vaccine to use in the first dose would be just slightly in excess of that which the body's already developed enzymes could dispose of without noticeable symptom—that is a little more than that which could be immediately reduced beyond the peptone into the amino-acid stage. But since we have, as yet, no practical method which can accurately gauge this, we are compelled to guess. Confining ourselves to the treatment of chronic infections, as recommended, we find that rarely

or never does a case come to vaccine therapy that has not lasted for quite some time, and therefore, we may reasonably conclude that considerable automatic stimulation of resistance has already taken place, and fix our trial dose accordingly. This, it seems, concensus of opinion, as result of experience, has fixed at approximately 100 millions of the killed organisms.

If such a dose be given, and be followed by local reaction—reddening and swelling around puncture—and by a slight rise of temperature, and, perhaps, general malaise for an hour or so—constitutional reaction—and, particularly, by symptoms of increased congestion—more swelling, tenderness, or pain at the diseased focus—focal reaction—or one or two of these three varieties of reactions, and all such symptoms subside within twenty-four hours, we can feel confident that we have approximately struck the proper sized dose, which should, however, be repeated, never increased, till it fail to elicit such response, since thus we may obtain the greatest effect with the least danger of over-dosage.

Human experience and animal experimentation teach that in the ordinary case no reaction to a dose of vaccine is entirely over till near the end of a week, so this period should be selected as the minimum interval between doses. If the primary dose is of the size above suggested, and produce no noticeable symptoms, we should still wait a week for precaution's sake, and then increase the amount administered 25 per cent, at least 10 per cent, when, should we strike the reaction-producing amount, we should proceed as outlined above. If, again, the dose be increased thus for the second, third, and even fourth time, and no reaction be obtained, serious consideration should be given to the possibility of having the wrong organism in the vaccine. A first reaction appearing later than the fourth of such a series of doses might be due to the sensitization induced by the preceding injections, and therefore could not be considered as evidence that the contained organism was active in the patient. However, it must not be forgotten that some patients show such feeble reactive power, often indicated by a usually subnormal body temperature, that either reaction or benefit is very difficult to secure.

If the primary, or any later dose, produce a too severe reaction, particularly large and painful swelling at puncture, marked and distressing disturbance around diseased area, and constitutional manifestations, fever and malaise, lasting over twenty-four hours, a considerable reduction in the size of the dose should be scheduled for the next week, perhaps as much as 50 per cent. Exactly similar routine should be followed when the not uncommon total failure to react, with accompanying manifest depression, is met, such as was previously stated to frequently show a subnormal temperature curve; but here up and down variation of the quantity injected will

necessarily be more irregular while we are "feeling out" the sensitizing point.

After a suitable reaction has been obtained, no increase in dose should ever be greater in amount than 10 per cent, and it should always be remembered that since it is our sole object to produce, each time, a slight reaction, the minimum which will effect this should always be sought.

Since there is reason to believe that the tissues around the point of puncture are still actively responding to the special stimulus of the injection at the end of a week, and even later, it seems desirable to seek a new area for each succeeding vaccination; at least to the extent that an arm, for instance, injected today will not be returned to for the purpose for at least four weeks.

The length of time that a course of vaccine therapy should be pursued depends principally upon the indications of benefit, but, I think, that, as a general rule, ten or twelve weekly injections must be given before one may say, I can, or I cannot hope to benefit this case by active immunization.

### PSYCHOTHERAPY IN EVERY-DAY PRACTICE.\*

By JOSEPH R. WISEMAN, A.B., M.D.,  
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**P**SYCHOTHERAPY, according to Münsterberg, is the effort to restore the disturbed equilibrium of human functions by influencing the mental life. Among the most powerful of the agencies at our command stands the influence of suggestion. By a suggestion is meant an idea which takes hold of the mind with such firmness that all opposing ideas are suppressed. Few of us stop to think what an important part suggestion plays in the ordinary events of every-day life. The success of advertising depends largely upon the power of suggestion. One day I see the advertisement of a certain article. I pass it by with an indifferent look. The next day I see the same article advertised in another place. I look at it with a slight degree of attention. A third, a fourth, and perhaps many more times the same advertisement is brought before me, until finally the desire to possess this much vaunted article becomes very strong. All opposing ideas,—the thought that I really do not need it, or that it costs more than I can afford to spend,—are swept aside and pushed into the background of consciousness; the suggested idea becomes more and more insistent until I finally enter the store and purchase what now seems indispensable. Suggestion has done its work. The precepts of our parents and teachers influence our lives, not because of the pure logic they contain, but by reason of the suggestive influence with which they enter our minds. All opposing ideas are inhibited. Some

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lawyers win cases by a cold presentation of indisputable facts. Many others add to their array of legal arguments a warmth of feeling and a suggestive force that bring them victory. In no phase of our daily life does the power of suggestion seem to be absent.

If suggestion is of such paramount importance in commonplace affairs, of how much greater influence should it be in conditions of disease. Yet no therapeutic expedient is more systematically neglected. Every physician uses suggestion unconsciously. The bright eye and cheerful voice with which he greets his patient, the calm assurance that everything is going well, the dictum "take a pill after each meal and I know you will feel better," the very faith the physician himself has in his own remedies, all are commonplace examples of helpful suggestions unconsciously given. Forel says "Suggestion insinuates itself into all the actions of our lives and combines with the therapeutic attempts of all kinds in a very complicated manner." "It either adds to or subtracts from the action of the drug. But in a large number of cases it actually forms the only therapeutic agent." No two individuals are equally suggestible, but all are to some extent influenced by suggestion. It should be our constant aim in daily practice to give our patients the benefit of intelligently directed suggestions. On the other hand, we should be on guard lest by anxious or gloomy looks, by hastily worded prognosis, or incautious speech we make suggestions of harmful character. Many a patient feels that he is doomed long before the physician has expressed his verbal opinion of the case. We should strive to cultivate that quality which Osler, in his *Aequanimitas*, has so beautifully described "imperturbability."

Just as suggestion can cure an illness, so it can produce one where none existed before. Forel relates the instructive case of a young man who two years previously had suffered an attack of pneumonia accompanied by severe headache. Since that time he had never been free from headache. The young man remembered that after recovery from pneumonia his physician had told him that he would never be entirely free from headaches as they were an inheritance from his father. The prediction was verified, and for two years headache was constantly present. After a single hypnotic treatment, accompanied by appropriate suggestions, the headache disappeared and never recurred.

A step beyond suggestion lies hypnotism. Hypnotism does not represent a magical or mysterious power, but is merely an artificially increased state of suggestibility. By a few simple procedures, accompanied by the suggestion, delivered in the proper tone of voice, that the patient feels drowsy and will soon fall asleep, the subject is brought into a condition where he really believes that sleep is approaching; all opposing ideas fade from his mind, and he soon

sleeps. While in this state of artificially increased suggestibility, the slightest command issuing from the lips of the physician takes hold of the patient's mind with such force, that he feels compelled to obey at once. Even post-hypnotic suggestions to the effect that after he has awakened he will subsequently carry out certain actions or perhaps lose a particular disagreeable symptom, are frequently obeyed. Almost every patient who does not resist the physician, aside from the insane, can be hypnotized. Likewise any intelligent physician, who has given a certain amount of attention to the subject, can hypnotize. The fear of hypnotism which is so widespread among the laity is altogether irrational. Hypnotism ought of course to be restricted entirely to physicians, and should never be employed merely for entertainment or for purposes of exhibition, but in trained hands, when properly used, it is free from danger. In reality it is much less to be feared than dozens of the potent drugs in daily use, of which the correct amount may do good, but an overdose will kill. Hypnotism has of late years fallen into disuse, and those who practice psychoanalysis according to the methods of Freud have entirely disregarded it, yet in selected cases it is capable of great good. Münsterberg relates the following instance: A highly intelligent young man was treated in a New York hospital for a combined morphine and cocaine habit of ten years duration. After a strenuous course of treatment lasting three months he appeared to be entirely cured. He had been without drugs for a number of weeks, had gained fifty pounds, and felt perfectly well. After leaving the hospital, before twelve hours had passed, he had taken ten grains of morphine and thirty grains of cocaine. The dose of both drugs rapidly grew until the patient came to a complete breakdown. Münsterberg believes that a few hypnotic treatments, accompanied by suggestions directed toward strengthening the young man's power of resistance, given during the latter part of his stay in the hospital and during the early part of his freedom, would have been sufficient to avert the final catastrophe.

Another phase of treatment by hypnotism is illustrated by the following case:

Mr. A., aged 28, unmarried, seen December, 1911, at St. Joseph's Hospital, service of Dr. Elsner, to whom I am indebted for this report. The patient complained of a variety of mental symptoms, principally of a sexual nature. He admitted masturbation, but maintained that he had overcome the habit, in fact one of his chief complaints was impotence. He had not experienced a normal erection for several months. This produced great mental depression, as he was anxious to get married but feared that he would be a wretched failure as a husband. The patient took no pleasure in life, was unable to work, and could not sleep more than two or three hours a night. Physical examination was en-

tirely negative. For the first two weeks of his stay in the hospital he sat in a corner of the ward with a most disconsolate expression on his face, ate hardly anything, slept but little, and altogether presented the picture of despair. One morning while talking of himself he told how wretched he felt and how thoroughly discouraged he was. "If there was only some way," he added, "in which I could gain a little confidence in myself, I might be able to be of some use." The thought then struck me that if by means of suggestion in the hypnotic state, one were able to impart a little of the confidence which the patient so sadly lacked, some good might be accomplished. I asked him if he was willing to be hypnotized. He seemed eager to try it, said he had been treated by nearly twenty doctors without benefit, and that he was ready to attempt almost anything.

I took the patient into a quiet room and had him lie on the bed in a comfortable position. I looked around for a shining object, and chanced to see the glass cover of an ink-well. I asked the patient to look steadily at the ink-well cover which I held before his eyes. In about a minute I assured him in a monotonous tone of voice that he was beginning to feel rather tired and drowsy, that his legs and arms were becoming heavy, that he felt a tired feeling stealing down his back, down his arms, and down his legs, and that he would soon go to sleep. The patient proved to be a good subject, and after a few repetitions of the suggestions, he fell into a light hypnotic slumber. I then made various suitable therapeutic suggestions, told him that his heart, lungs and all of his organs were sound and strong, that therefore there was every reason why he should have confidence in himself and be able to work, that he would soon eat better, sleep better, and feel happy constantly. After the hypnotic sleep had lasted about five minutes I awakened him. The next day a change in the patient appeared to have taken place. He seemed somewhat brighter, began to take a little interest in his surroundings, and to ask for food. The hypnotic treatments were given daily, or every other day, with therapeutic suggestions along the same lines, but varied to suit the occasion. The result was marvelous. In a short time the patient was sleeping regularly eight hours to ten hours a night, his appetite had returned, he was cheerful and happy, and seemed like a different person. At the end of ten days, after half a dozen hypnotic seances, he was well enough to leave the hospital. He said that he felt self-reliant and full of courage, and that he was going to work at once in order to prepare for his approaching marriage. I have not heard from the patient since.

The form of psychotherapy which is most widely discussed at the present time is psychoanalysis. According to Freud, whose remarkable work has excited the admiration of the scientific world, large groups of mental disturbances depend upon an emotional trauma or shock, suf-

fered by the patient in the past, and in most cases completely forgotten. Circumstances were such that the original emotion could not be adequately worked off at the time and it was therefore repressed into the background of consciousness. As Brill says, we all know that it is not always possible to give vent to our feelings, and an insult that has to be swallowed leaves a very different feeling from one that is retaliated. Because the pathogenic idea was of a painful nature the ego tried to forget it but never succeeded completely. The painful impression kept struggling to come to the surface and in the course of this struggle was transformed into a nervous symptom such as a paralysis, an obsession, a phobia or what-not. The original painful idea was thus obliterated, but a substitute was left in its place. Why is it that this particular emotional storm left such a lasting imprint upon the mind whereas other psychic disturbances of apparently similar intensity soon passed away? Freud maintains that it is because the unpleasant idea bore a relation to suppressed or artificially inhibited ideas of a sexual nature, usually dating back to childhood. This is one of the fundamentals of Freud's theory and has occasioned a great amount of controversy. To attribute such great importance to the idea of sex is very repugnant to many, and Freud has been facetiously described as curing his patients by asking them a lot of nasty questions. However, according to Freud, sex does not mean merely the grossly sensual, but is used in the broadest possible manner. When we come to consider that a vast influence the sexual life as a whole exerts over all mankind, it becomes reasonable to believe that very many, though not all, mental disturbances have a sexual basis.

To cure these conditions the various methods of psychoanalysis are at our disposal. The patient's entire mental life is subjected to an exhaustive investigation, often lasting weeks or months. Every effort is made to bring to the surface the repressed ideas which are below the threshold of the patient's memory. The analysis of dreams is here of great service. The splendid work of Freud has shown that every dream represents a concealed wish. The manifest dream content, namely the dream as the dreamer remembers it, is apparently a heterogeneous mixture of strange forms and incomprehensible happenings. When, however, the dream is analyzed to bring to light its true underlying meaning, its latent content, it can be shown that every dream represents a logical and orderly train of events in the dreamer's mind by means of which he succeeds in realizing a wish which is denied him in the waking state. It may be remarked in passing that most dreams have an underlying sexual basis. When the suppressed emotional complex, which appears to be at the bottom of the patient's mental disturbance, is finally brought to light, two methods are at our command for disposing of it. The patient



may be made to bring to consciousness the disturbing complex with the greatest possible vividness, to live through the original scene again with all its intense emotional accompaniments, to give vent to all the suppressed feelings which had been so long repressed, and to discharge them forever from consciousness. This is the so-called cathartic method. The second way demands that the physician bring the primary experience strongly to consciousness and then, by training, link it with new and more desirable associations. The disturbing idea is thus not to be discharged but to be side-tracked so that it will in future lead to harmless results. What was formerly a starting point for abnormal ideas now becomes an indifferent object of interest and all its evil consequences are cut off. Whichever method is employed, when the original psychic complex has been finally disposed of, a permanent cure usually results.

Permit me to report a case of rather unusual interest: Miss X., aged 23, seen July 29, 1912, referred to me by the late Dr. Nathan Jacobson. Parents and seven brothers and sisters living. The youngest is well, all of the other six are "nervous." One sister had hysterical attacks in which she would run up to strangers on the street and ask them to save her. One brother had nervous spells in which he saw and heard peculiar things; he suffered from insomnia and had to be watched, but recovered in three years. One sister and one brother have tremor of the hands. As an infant, patient was very restless and cried most of the time. Has always been delicate and unable to run, jump or sweep like other people. Had no definite illness until she graduated from High School at the age of nineteen. She then began to complain of a pain around the waist which was often so severe that she was unable to stand. She had pain along the spine, headache, palpitation and weakness, and finally took to bed. In the past four years she has spent about three-quarters of the time in bed. Since the age of nine she has had some leucorrhea. Three years ago, her physician examined her vaginally and insisted that she needed local treatments. The patient dreaded these; and when it came time for her to go to the doctor's office would cry and carry on to such a degree that force would almost have to be used. No local benefit resulted, and her sensitive nervous system was undoubtedly injured. Since infancy the patient has slept very poorly. Two years ago she had a severe attack of insomnia, rarely slept more than one to three hours a night, and at one time states positively that she went a whole week without sleep. She took numerous hypnotics, among them Somnos, which her physician had called harmless, in doses as large as two ounces. She was also given morphine and nearly developed the morphine habit, but as soon as she discovered what she was taking, resolutely stopped at once. At present she never sleeps more than four hours a night and has

not exceeded this for years. She trembles a good deal, especially on the right side, and is short of breath. Appetite is good, bowels very constipated. Has been confined to bed for several months past. Sitting up causes pain along the spine and around the waist.

Physical examination showed a fair state of development and nutrition; the cheeks and neck presented an irregular erythema; the lips were red, and the skin rather pale. The patient frequently closed her eyes during the examination as if tired. No exophthalmos; no Stellweg, Graefe or Moebius. Closed eye-lids, and extended tongue and fingers tremulous. Goitre present, firm, of moderate size. Loud first mitral sound followed by a faint systolic murmur. Both tenth ribs mobile. Marked gastric succussion. Upper abdomen exceedingly sensitive to the lightest touch, yet over this same region, sensation to pin-prick was actually diminished. The rest of the examination, including the pelvic organs, was practically negative.

After summing up the facts obtained from the history and examination it seemed evident that a patient who presented such a variety of symptoms, referable to no definite organic anomaly and unimproved by rest in bed for most of four years, must be one who required vigorous psychotherapy. I therefore began by stating positively that I had given her a very thorough examination, that I found no organic disease present to account for her illness, and that there was no reason at all why she should not get well. I instituted a modified Weir Mitchell cure as far as it could be accomplished with the patient at home. Her mother gave daily warm baths, followed by a cold rub-down and massage. The patient said that she was unable to take milk, but was assured that it would be modified to insure easy digestion. With the addition of a little lime water she was soon taking a quart and a half of milk daily, besides an abundant quantity of solid food. Improvement was certain from the first, although progress was slow. The patient was repeatedly told that she was going to get well, each symptom was attacked in turn, and assurances given that it would gradually get better and finally disappear.

Further study showed that the patient was suffering from exophthalmic goitre, despite the absence of eye symptoms. The pulse was always rapid, averaging 120, and the temperature by mouth ranged from 99 to 100 degrees. The goitre, tremor and palpitation were additional features. Various forms of treatment were tried, including quinine hydrobromide, thymus extract, hypodermic injections of pituitrin, and Beebe's serum. The patient continued to improve during the time these various remedies were administered, but after they were discontinued, the improvement seemed to go on just as rapidly as before. No drugs were given for the sleeplessness. It was carefully explained to the patient that there was no reason why she

should not sleep and that undoubtedly she would soon begin to sleep well. That night she slept eight hours, and after a few weeks was able to sleep ten or twelve hours without difficulty.

April 16, 1913, about nine months after treatment had been begun, the patient volunteered the following history of her mental life, which was elaborated by subsequent psychoanalysis: Since a young child she has always had something to worry about. She has always been intensely religious, went to confession often, and felt that she was a great sinner. Had read numerous books on religious subjects. As a child of six, whenever she put on a new dress, she would at once proceed to tear a hole in it. Her parents could not understand why she did it and the child steadfastly refused to explain. The real reason was that she felt her sins to be so great that she must do penance; she enjoyed the new dress and therefore punished herself by tearing a hole in it. She had an insistent idea that if she did not punish herself her mother and grandmother would die. This obsession and the underlying thought of doing penance have caused her to perform numerous peculiar actions all her life. Would frequently burst out crying without apparent cause, but really due to the "worry" as she called it. Of late there are three words frequently before her which she sees written upon many objects and even upon the foreheads of certain people. These words are "ingratitude," "injustice," and "bother." For fear these words will come true, as she puts it, she has a whole group of obsessions and impulsive actions. At no time during the day or when awake at night is her mind free. She has no right to enjoy herself or to feel happy. Whatever she would like to do she denies herself so that she may do penance. She is unable to put down the simplest object for fear that it will be put in the wrong place, and will sometimes spend a half hour or an hour before she can induce herself to part with it. She is afraid of the dark, afraid of various animals, afraid of contagious diseases, and has all kinds of fearful terrifying dreams. Lack of time has allowed the mention of but a few of the amazing series of doubts, fears and obsessions from which the patient suffered.

In attempting a cure the beginning was made small and only a few symptoms were attacked at a time. The patient was carefully reasoned with, she was shown that she was probably less sinful than the average individual, and that her idea of constantly doing penance was entirely wrong. Encouragement was given that the three words she saw nearly everywhere would gradually lose their distinctness and fade away. She was urged to put down objects the very first place that presented and to take the consequences, whatever they might be. One by one, during a period of several months, the doubts and phobias were encountered and overthrown until finally the most remarkable result that could

have been desired was attained. The three words faded away and finally disappeared; the crying spells stopped; the "worry" at first merely came under control but at length entirely disappeared. Life began to take on a new aspect, and the patient commenced to feel that she had a right to be happy. Even the character of her dreams changed, and instead of terrifying visions which caused her to jump out of bed with fright, her dream life became pleasant with scenes of fields and flowers predominating. An entirely new being seemed to be created and she can now look back upon her former self as almost another personality. From a wretched unhappy invalid, in bed most of the time, unable to help herself, sleepless, racked by pain, and tortured by all manner of abnormal mental processes, she has been transformed into a young woman, who is care-free, happy all the time, able to walk several miles a day, to read, do housework, make her own clothes, and even to endure more than other supposedly well members of her family.

With this patient the main psychotherapeutic weapons were suggestion and psychoanalysis, aided by argumentation and persuasion. Dubois has been a very strong advocate of the healing powers of reason and persuasion, but Forel has very properly shown that the cures obtained by Dubois depended principally upon his suggestive powers and not upon the logic of his arguments. It is interesting to note that in the treatment of Miss X. the sexual life was never once discussed, although apparently her case was one in which we might have expected to find a sexual basis. Nevertheless, a cure has been obtained.

This paper is admittedly incomplete and has only been able to touch in a general way some of the salient features of the subject. It is intended to be a plea for a *conscious* psychotherapy in every day practice. Even in organic bodily disease, the thousandfold paths which connect every part with the brain, bring the psychic aspect into intimate relation. We may be unable to cure the patient of bodily disease, yet we can broaden the mental horizon and make life fuller and happier. As Münsterberg says: "It is the village doctor who needs psychotherapy much more than he needs the knife and the electric current." "It ought to be used by every physician, as it fits perfectly the needs of the whole suffering community."

An unfortunate condition present in modern psychotherapy is the partisanship displayed by its various schools. The hypnotists pay little attention to psychoanalysis, and the followers of Freud attempt to analyze their patients with the entire exclusion of suggestion and hypnotism. Others, such as Dercum, scoff at psychoanalysis and believe that the analysis can be made to represent anything the physician has started out to prove. This state of affairs appears radically wrong. To be sure the science of psychotherapy is still in its early infancy, despite the great advances of the past few years, nevertheless the

time is undoubtedly coming when we shall be able to classify our cases more accurately and perhaps to say, this patient requires hypnotism and that patient should be treated by psychoanalysis. Until that time arrives we ought to use any or all of the therapeutic expedients at our disposal to attain the desired end—the cure of the patient.

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### THE IMPORTANCE OF THE MEDICAL SUPERVISION OF OLDER CHILDREN.\*

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ONE has but to keep in touch with pediatric literature to realize the great amount of work that is being done to bring before the public the importance of the proper care and feeding of infants.

All over this broad land of ours, the people are waking up and something is being done to lessen the needless sacrifice of helpless infants from preventable causes.

Infant welfare campaigns, milk stations and summer camps are among the many agencies helping in the work that means so much to us as a nation.

From infancy to school age is a period that until quite recently has not received as much attention as it should have from the medical profession and parents have not been made to realize how important it was to have these young children kept under proper medical supervision.

However, there seems to be a more systematic effort to supervise this period than formerly and some excellent literature has recently been published. But this is only a start and there is much that should make us realize our obligation to these little ones, and should stimulate us to take a more active interest in securing for this period persistent and proper supervision.

At school age, medical supervision of the school boy and girl has arrived in this state

and those children attending the public schools will receive a benefit that was long denied their predecessors.

Too much stress cannot be laid upon this very important matter, for nothing has such a bearing on the future welfare of the children as their proper supervision and inspection and the early and prompt correction of those processes which tend toward mental dullness and physical infeeblement.

All too well can we recall cases which have reached adult age handicapped by infirmities that should have been corrected in early childhood.

How easy, too, it would have been, had the first inroads of the disease been discovered early and with a little urging on the parents to have something done promptly, prevented the handicap which has followed all through life.

Every effort is being made to conserve our natural resources and in so doing, we must bend every effort to see to it that the health of the children, from birth on, is safeguarded so that they may reach maturity fit mentally, morally and physically.

It is my desire in this short paper to call your attention to that period in the child's life between the ages of 10 and 14 or in other words, those years leading up to puberty.

The approach of puberty may be the beginning of various nervous phenomena which in themselves are of little importance but unnoticed and untreated may lead to serious results.

The rapidly growing child approaching the teens is a complex organism of no mean proportions and demands of its parents or guardian resourcefulness, frankness, sympathy and honesty in all its dealings.

The field of preventive medicine is constantly widening but it has been only of late years that its value has been realized and put to practical use.

Nowhere does such an opportunity exist as in childhood, especially in those years where the boy and girl are making ready for manhood and womanhood.

Rather than to attempt to cover this entire field, it would seem to me wiser to pick a few special reasons why this period in childhood should be carefully supervised.

It seems to me that this period, this border land it might be called, is the most critical of all.

The boy or girl at this age is impressionable, easily led and easily influenced, oftentimes physically overgrown and awkward, mentally abnormally sensitive and reticent and frequently difficult to manage.

These are the men and women of tomorrow. These are the ones that some day will take our places and our duty is plain, to see to it

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that they are fitted as they should be for the beginning of manhood and womanhood.

This is the time to watch the nervous rapidly growing child, to prevent those serious diseases which may last through life.

Between the ages of 10 and 14 is a fertile period for the development of many functional neuroses.

Hysteria in its many forms and a host of other functional nervous disturbances seem to be most active at this time.

Then, occurs, too, many of the early symptoms of the various degenerative changes which are the forerunners of organic diseases of the brain and nervous system.

All too well can we recall case after case which should have been detected early, but was not till some serious nerve explosion occurred leaving disaster in its wake.

Rheumatism with its many manifestations, chorea and many other diseases are apt to occur at this period and point out the necessity all too plainly for proper custodianship.

This is the period when boys and girls are easily overworked in school and when the hours of sleep are oftentimes much less than they should be.

Late hours is the cause of an enormous amount of damage at this time of life. One has but to visit the various picture shows and entertainments given nightly to see the many children that frequent these various places of amusement. It is almost incomprehensible why the matter of sleep is so neglected.

The nervous and irritable boy or girl, constantly on the go, craving more and more excitement, soon has a nervous system that falls an easy prey to almost any vicious habit.

Is it the fault of the parents entirely that these late hours among children are so common or are we negligent in our duty as physicians not to explain to parents, and to the children the importance of plenty of sleep?

An investigation of the ordinary hours of sleep of many of our little patients would, without doubt, result in many surprises.

At this age the growing boy and girl needs every bit of nourishment it is possible to get to furnish fuel for the rapidly growing structures.

Altogether too little time is spent in explaining to these growing boys and girls the necessity of good nourishment and what is meant by proper food and the correct preparation of the same.

Many of these children get enough to eat but it is the wrong kind of food, often of poor quality and improperly prepared and does not furnish a sufficient number of calories.

The question of nutrition at this time of life is very important, more so than we realize, for many times the children who come from good homes are under-fed.

How many times in our visits to these sections of the city where poverty reigns have we been struck with the disgraceful waste that is often seen in many of these homes.

In the ill-kept flat, poorly lighted and ventilated, it takes but one glance at the littered kitchen sink, filled with half-eaten food and spoiling things to realize if only a little wholesome advice had been given in regard to health matters and right living early, how much different it all might have been.

There is probably no condition that is so common, especially among girls, as constipation and this is a habit, though frequently formed early, is surely to appear in later childhood, through neglect.

There is nothing that taxes the ability of the physician more than curing constipation in growing girls and boys, with their utter disregard for regularity of habits.

The good that can be done in preventing constipation by careful supervision, proper diet, exercise and habits would eliminate one of the greatest evils medicine has to contend with.

Oftentimes one has to supervise and regulate the entire household before securing proper co-operation from parents.

The prevalence of the so-called social diseases has astounded almost all investigators, and while many physicians have realized the dangers due to these diseases, they have been at a loss to proceed against them in a rational and effective manner.

Whether sex hygiene can be properly taught in the average class room or lecture hall, is an open question, but the personal contact acquired by frequent physical examination will help to eliminate many of the underlying causes of these social diseases and I believe will be a great aid toward helping to reach some accurate conclusion as to the best means to eliminate these diseases.

All educators and investigators now agree that first and foremost comes education, and it seems to me now that there is a chance of reaching some of these children through the examination by the school inspectors; a work can be started that will be effective.

It is our chance now as these boys and girls are brought to us, after being referred by school inspectors or parents, to subject them to a good, careful, physical examination and explain to them the importance of keeping the mind and body in good order.

These children can be guided in regard to habits of right living by the awakening in the boy and girl, of the desire to be strong and well, to make men and women who are fit for the work of this life.

It is known to all of us that a sound mind in a sound body is one of the best safeguards

we have against all that tends to degrade morals and health.

Those of us who have worked in pediatrics for a number of years have but to consult our case records to find how very infrequent it is for us to be consulted in regard to older children except for some acute disease.

It is the exception when the children have been brought in for physical examination and good wholesome talk on health matters. (It has always been thought best to let these boys and girls just grow up any old way as long as they are off the bottle.)

The child is advised to seek the dentist at frequent intervals, at least once in six months, and why not the physician to see that the heart and lungs are healthy, the blood and urine normal and that there is no tendency to deformity or disease? Will anyone gainsay the value that this might have on our anæmic and constipated girls, our rapidly growing and nervous boys?

Some will say, "Why is so much stress placed on the examination of school children?"

For the very reason that already intense interest is being aroused among parents as to the physical qualifications of their children.

As a matter of fact, probably only a part of these examinations will be made by the regular school physician but many will seek their own doctor or someone specially qualified in children's work.

This means that never before has such an opportunity presented itself to the medical profession for bringing home to parents and guardians the importance of keeping a close eye on growing boys and girls.

It is not at all unusual for us to know instance after instance of those reaching the prime of life, taking every possible precaution to prevent "clay pipe arteries" and other senile changes.

It is not at all an infrequent thing to know of men, keen in business, seeking their physician to get his opinion on their physical condition before entering upon some business venture of great magnitude. Why, then, should we defer our opinion on the human risk to that time of life? Why not begin early in the formative period and prevent many of the tendencies by proper supervision?

The advantages to be gained by the medical supervision of older children are many but the special points that seem to be uppermost are these: First, with the advent of the medical inspection and examination of school children, it is going to be possible for us to get in closer contact and keep under medical supervision a certain proportion of these children. Not all, not as many as we should have. But the importance of this work is going to be so emphasized that parents will realize more fully the needs of their children.

Second, it is going to enable us to keep a

closer observation of the growing boys and girls and will, I believe, bring home to the parents as never before a realization of the importance of making it a business to keep their children well.

Third, by starting a closer relationship between the children and their physicians, it will give the physician many opportunities to advise parents in regard to the needs of their children.

Mr. Chairman:—This period of life has only been mentioned superficially, for it opens up so much that to cover it completely would necessitate a great deal of time. It is my desire to call attention to just a few common points of interest, so that in our enthusiasm over the baby, we will not neglect the older child.

#### Discussion.

DR. J. ROBERTS JOHNSON, Syracuse: This section will be fortunate indeed if we have presented to us any paper or discussion which, in its possibilities for good, surpass this paper of Dr. Wynkoop's.

Prevention, not when ignorance, neglect, and disease have made the task largely impossible, but, in the plastic growing period when it is easy, comparatively, to correct and mould into health, this should be our earnest effort.

The conservation of child life—so long neglected—is one of the encouraging signs of the times and who has brought it about? *You* and men of similar purpose.

The medical supervision of older children is a matter of education. The parent naturally resents the idea of his child being subjected to a physical examination unless acutely ill; yet we well know that many of the serious ailments of childhood are not recognized by the parent, no matter how intelligent or watchful, for instance, the significance of muscle pains, with the possible ensuing endocarditis. So, too, it would seem unnecessary to most parents that the rollicking boy or girl should be told what, when and how to eat, to avoid indigestion, constipation or more serious conditions, or the need of normal sleep and freedom from nervous excesses that the rapidly developing nerve centers be not permanently injured.

The boy or girl approaching puberty is a marvelous mixture of wisdom, energy and chance and if ever the combined knowledge and tact of parent and physician is needed, it is at this time. Proper oversight cannot be effectively done en masse. Individual instruction and examination by the physician, in the home, in the office, only is lasting, as you thereby gain the child's confidence. The medical school inspector should be a specialist in his line, devoting to it his entire time, and paid accordingly. This plan is meeting with success in certain localities. This type of school supervision is arousing favorable public sentiment so that the parent is coming to believe that there is a need for more frequent

and careful physical examination as many of these cases are referred to the family doctor or specialist for the correction of heretofore unrecognized conditions. Liberal appropriations are being made toward maintaining properly equipped school gymnasiums with competent instructors, better buildings, with every hygienic convenience, and more spacious playgrounds. These are steps pointing to a healthier generation. Nevertheless there should be a closer relationship between the parent, the rapidly developing child and the physician. Disease prevented is better than disease cured. With the infant and young child we strive to procure proper food at suitable intervals, but too little regard is paid to this matter in older children. The injurious effect of a hurried breakfast, neglect of going to stool,—pop-corn, candy, ice cream, or a dime lunch of most anything at the school counter or some nearby store surely needs correction. I fully agree with the author of the paper that the matter of teaching sex hygiene is a delicate one. It cannot be effectively taught in a mixed class in the school room. The sex should be separated and the smaller the class the better. The physician has a great responsibility in this matter of imparting wholesome instruction, correcting wrong impressions and habits and giving assurance. The over-crowding of school work in the higher grades, with its resulting nervous strain, and in some cases complete breakdown, is a serious outlook for the future. The backward child, the mentally deficient child, the child handicapped by poor food and environment, these and many other conditions are taxing the child's nerve centers until some functional or organic disease brings the case to the physician's notice. What of the pernicious habit among school boys of cigarette smoking, of constipation and anemia among girls, of goitre, of chorea, of unrecognized valvular disease, of nasal deformities and dull hearing? These and many more conditions in children, called healthy, should cause us to seriously advocate the regular physical examination of every child up to fifteen years of age. This closer touch would mean better morals, a deeper regard for the known laws of hygiene and health, and in the end a higher civilization.

### SURGICAL TREATMENT OF ACUTE OSTEOMYELITIS.\*

By W. L. WALLACE, M.D.,  
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**O**STEOMYELITIS was described and treated many years before bacteria were recognized. The cause was supposed to be a trauma, producing suppuration in and around the bone. The secondary nature of os-

teomyelitis was not suspected, though, strange to say, pyemia following osteomyelitis was recognized by the pus-filled veins extending from the seat of the trouble to other abscesses.

The surgical treatment was usually procrastination, in hope that the disease might become chronic and that some of the limb might possibly remain after months of suppuration. Some bold surgeons later undertook to prevent the damage by amputating the limb at a point above the abscess. As the medullary cavity above the amputation was infected, the experience in these cases was always disastrous. The next step in the surgical treatment was amputation at the joint above, with fatality as the usual result.

#### SURGICAL TREATMENT IN 1890.

Staphylococci were seen in pus by Pasteur in 1880 and were proved to be the cause of osteomyelitis and other forms of suppuration by Roseback in 1884. From this time surgery was no longer in the dark, and within six years, as early as 1890, Nicholas Senn wrote: "It can be laid down as an axiom in surgery that the medullary cavity, in every case of acute suppurative osteomyelitis should be freely exposed."

Thus, twenty-five years ago Senn advocated the modern surgical treatment of osteomyelitis.

#### ACUTE OSTEOMYELITIS.

Acute osteomyelitis is a secondary, or pyemic infection of bone, resulting from a boil, a wound, or an inflammation; occurring, as a rule, in a young person; starting in the spongy portion on the shaft side of the epiphyseal cartilage; the occasion frequently being a traumatism or exposure; the germ, in the great majority of cases, the staphylococcus; the damage rapid and extensive necrosis; and the severe symptoms demanding immediate surgical treatment.

#### PYEMIC.

Osteomyelitis as a *pyemic manifestation* comes at a very definite time in the course of some primary infection. If it follows scarlet fever, or any streptococcic infection, it appears within a few days; if pneumonia or grippe, about two weeks; if typhoid, four to eight weeks. Gonorrhoeal metastases occasionally locate in bones; usually, however, in joints, about three weeks after the primary discharge.

#### PRIMARY FOCUS.

The source of the infection in all cases of acute osteomyelitis is a *pus focus* located in some other part of the body, causing a bacteremia, and resulting in this particular pyemia in bone. The source may or may not be positively determinable. The focus may be insignificant and the resulting bacteremia is frequently so mild that it is overlooked.

#### MOST FREQUENT AGE.

That acute osteomyelitis is an infection of *early life* is because sore throat, inflammation, exposure and traumatism are so frequent at this time; probably, also, because the growing bone, like the young heart, is particularly likely to give

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lodgment to bacteria and to succumb to their attack. Osteomyelitis is frequent in infants as an infection from the umbilical cord, which infection rapidly ruptures into the joint, causing a septic arthritis. After infancy, acute osteomyelitis is less frequent until eight years of age, then more and more frequent until seventeen, and is comparatively rare in adults. The child has a throat for scarlet fever and the boy has bones for osteomyelitis.

#### LOCATION.

In infancy osteomyelitis breaks through the cartilage and involves the joint. In adults there is no cartilage, so that joints are frequently invaded. In youth the cartilage is able to protect the joint; therefore, before the abscess can break through the bone and open externally, the full length of the shaft is liable to be destroyed.

Acute osteomyelitis most frequently attacks the femur and tibia in boys, bones which are the most rapidly growing and most exposed. Occasionally several bones are involved at once or in succession, or in association with other structures, as joints, heart or kidneys.

As bearing on the *relative* frequency of osteomyelitis, Dr. Astley P. C. Ashhurst of Philadelphia says that in nine years in the Episcopal Hospital they have had more cases of acute osteomyelitis than of acute septic endocarditis or acute septic arthritis.

#### CONDITIONS FAVORING AN INFECTION.

If certain germs of the right degree of virulence are introduced into the vein of a rabbit, metastatic infections are invariably produced. It has been found, however, that even with very mild germs which the system could otherwise overcome, a metastatic abscess frequently follows exposure to cold, trauma, exhaustion, strain or fatigue. LeConte believes that the great majority of cases of osteomyelitis are due to traumatism and are caused by a neglected osteo-periostitis.

The probable reasons why every fracture is not liable to metastatic infection are: first, the intensity of the local reaction produces a protective leucocytosis; second, the fracture opens the medullary cavity, and the tension so favorable to the advance of infection is prevented; and third, germs of exactly the right variety and degree of virulence do not happen to be present. At any rate, it is rare for a simple fracture or a simple traumatic arthritis to become infected.

#### GERM IS STAPHYLOCOCCUS.

Although the infection may be caused by streptococci, pneumococci, or, rarely, by other varieties, the germ usually causing acute osteomyelitis is the staphylococcus. The clinical conditions, however, in all cases are similar and depend more on the location of the abscess than on the character of the bacteria—any acute infection in bone producing most destructive results.

#### SELECTIVE ACTION OF BACTERIA.

Several factors enter into the apparent selective action of bacteria. Sometimes it is a matter of *chance or accident*. A pure culture of staphylococcus was injected into a rabbit's vein and the damage was found to be concentrated in one kidney, which contained multiple abscesses. Again, it may be a *trauma*, a very slight injury often determining the location of the metastasis. Sometimes it is a localized lowered vitality or *poor resistance*, as seen in the vulnerability of scar tissue or chronically inflamed organs. Sometimes the necessary "*end-of-the-route*" determines the location of the embolus, as in the brain. This may frequently be a determining factor in bone.

The selective action of germs has been studied by Dr. E. C. Rosenow of Chicago, who in an article read before the New York Academy of Medicine in November, 1913, explains that different and definite lesions are caused by different grades and varieties of streptococci, and that by varying the cultural conditions the virulence and other characteristics of the germs may be changed back and forth to give various definite results. The findings of his experiments are uniform and certain,—a strain of germs producing in all cases arthritis, or endocarditis, or osteomyelitis. He shows that the streptococcus *viridans* is the cause of chronic septic endocarditis, and that as the virulence of this germ is increased it will cause rheumatism, then arthritis, and when still further increased, it will take on the characteristics of the pneumococcus.

That definite germs tend to produce definite results has long been well understood,—scarlet fever, diphtheria, tetanus, gonorrhoea. So we know that streptococci produce arthritis, rheumatism, endocarditis and erysipelas. Why?

The staphylococcus *pyogenes aureus* primarily produces boils, carbuncles, broncho-pneumonia, quinsy and wound inflammations. From one of these infections may result septicemia, with or without pyemic abscess of bone, osteomyelitis.

#### DAMAGE DONE BY BACTERIA.

The *damage* of bone infection may be studied experimentally and clinically.

Dumont (Surgery, Gynecology and Obstetrics, September 13, 1913, page 294) injected staphylococci into the veins and arteries of rabbits. In the first two to four hours the cocci were found in the blood only; after six hours principally in the small vessels of the bones; after fifteen hours the vessel walls were broken down and the organisms were in clusters in adjacent tissues; after twenty-four hours miliary abscesses were found around the clusters.

The staphylococci taken by the blood to the end of the bone are blocked in the capillaries. Unlike the streptococci (the toxins of which are eliminated by the kidneys and liver, causing nephritis and hepatic destruction), the effect of the staphylococcus is mostly expended locally,

its strong toxins breaking down tissues in its extension, producing necrosis of bone marrow and bone cells. While this necrosis is produced within a few hours, the resulting liquefaction is a slow process, a boil in the skin taking seven to ten days to "break" and the dissolution of the dead bone requiring years of *chronic* osteomyelitis.

#### SYMPTOMS OF RHEUMATISM.

The local symptoms of *acute septic osteomyelitis* are intense. Some attacks are so severe, however, that the local symptoms are entirely overlooked,—being overshadowed by the chill, prostration, headache, delirium and coma. Usually the pain and tenderness are so localized that the attention of the physician is called to the vicinity of the knee or hip, and a careful examination shows that the shaft and not the joint is involved.

#### DIAGNOSIS.

Acute osteomyelitis is called "rheumatism" in the vast majority of cases. It is near a joint and the joint is at least sympathetically involved. Many members of the medical profession still believe that rheumatism is an idiopathic chemical disorder of the blood which irritates the joint. The general acceptance of the knowledge that acute articular rheumatism is always a metastatic infection will make us suspicious of germ damage. If the acute rheumatism is an inch away from the joint surface it probably means *osteomyelitis* and destruction of bone. The principal aid to diagnosis comes with the knowledge that acute rheumatism is always metastatic and may be osteomyelitis.

The diagnosis must be made before an X-ray would show damage.

#### SURGICAL TREATMENT.

The so-called suppuration or furunculosis of bone should be aborted. Delay in osteomyelitis is like poulticing a felon. To rely on anti-streptococcic serum instead of immediate surgical treatment is foolish, especially when we remember that the great majority of cases are staphylococcic. An abscess of bone should be opened and drained at once to relieve the tension. An opening in the bone will do no harm if the diagnosis is wrong. The operation will avoid destruction of bone and extension to neighboring joints and distant parts. The patients are desperately sick and while they require an early operation, it must be rapid, simple and harmless. There is no need or excuse for an *extensive early* operation.

Dr. Ochsner, in answer to a letter, says: "The most important feature in the treatment of acute osteomyelitis that we have made use of and that is not generally in use consists in splitting all of the tissue down to the bone for a distance of at least two inches above and below the limits of infection. This incision must go through the periosteum and the periosteum should be loosened

on each side of the incision one cm., and if there is any one point in the bone that has been more painful on pressure than any other one point, we open the medulla with a very sharp chisel with as little traumatism as possible and then apply a large moist dressing, consisting of two parts of saturated boric acid solution with one part of alcohol, and cover this with rubber protective tissue. This permits the lymph canals to carry away the infection. We never remove dead bone at this time, but leave it to act as a splint for the formation of a sequestrum. In this way we avoid shortening and deformity, and, of course, avoid sepsis."

Dr. Murphy urges that the bone should be opened with an ordinary drill within twelve to twenty-four hours of the initial chill, which indicates medullary infection. He declares that in neglected cases most of the total destruction of bone occurs within forty-eight hours of the chill.

#### PREVENTION.

Can anything be done to prevent acute osteomyelitis? Can we do away with the infectious focus? Can we teach our profession and our patients that rheumatism and osteomyelitis are metastatic infections due to diseased throats, teeth, ears,—many of which conditions may be avoided or rendered harmless? Can we not even go back of the throats and tonsils and appreciate that the epidemics of infection come largely from inhalation of bacteria-laden dust?

Closely packed, poorly ventilated schools and homes, with their clouds of dust, breathed into the adenoid throats of poorly nourished children with rapidly growing bones, furnish the necessary conditions for an infection.

I do not see why some practical method might not be found for filtering osteomyelitis and rheumatism from the air we breathe, as typhoid is now filtered from our drinking water. In this connection, why should not a first step be for cities to maintain a municipal vacuum cleaner, to make frequent collections of germs from the crowded homes of the poor?

#### SUMMARY.

Osteomyelitis is a pyemia; a secondary abscess in a case of mild or severe septicemia. The germs are carried to the bone by the blood. The primary focus producing the secondary lesion is often unrecognizable. Intense pain in a bone in a young person with chill, fever, high leucocytosis and extreme localized tenderness, probably means osteomyelitis.

A surgical operation should be done at once to establish drainage, relieve tension and save destruction of the limb. The operation should be simple and rapid, reaching the medullary infection with a chisel or drill.

Rheumatism is always a metastatic infection. Symptoms of rheumatism should make us suspicious of the possibility of osteomyelitis.



*Discussion.*

DR. ROBERT H. M. DAWBARN, New York City:  
In the few moments at my disposal, in order to be explicit and reasonably clear in what I wish to lay before you, I must, I fear, seem dogmatic. Let me begin by asserting that the chief cause of the high degree of mortality attendant upon streptococcic and certain other acute and sub-acute involvements of the marrow of the long bones is the lack of entire thoroughness, or of anything even approaching this, at operation. Assuming that we have chiselled into the canal at the onset of the disease, and that symptoms do not thereafter rapidly subside and end in early recovery, it is customary to remove by Volkmann's spoon as much of the marrow as seems diseased to the naked eye.

On the contrary, if any portion of it is visibly infected, it is reasonably certain that all of it is so, though, of course, only microscopically so at first. And conservative surgery—properly so called because conserving life and limb invariably—demands that if we remove any, we remove all the marrow. Of the three vascular ways whereby a long bone is nourished, namely, by the nutrient vessels, by those of the periosteum, and by those of the marrow canal, the last can be sacrificed always without jeopardizing the life of that bone, provided that the first two ways remain intact.

But how are we to know at what levels to chisel or trephine in order to come upon the exact endings of the canal, above and below? Not a text book gives answer. I had to experiment on the skeleton by sawing across all the various long bones and then measuring the depth of the exposed canal, to find out. Taking the femur for one instance, it was proved that its upper canal-end is opposite the base of the lesser trochanter, and its lower end two and one-half c. m. above the adductor magnus tubercle.

Having exposed by trephine or chisel the full width of the canal at both its ends in the diseased bone in question, we next pass into one such opening, through the canal and out at the other, a piece of coarse wire with a tiny loop bent upon its advancing end. To this loop we fasten the end of a stout fish-line, which presently (as in the photograph I now pass about the room) ties at three or four equidistant points an ordinary gauze sponge rolled into a very slender, hard roll, and thereafter still leaves a considerable free end of fish-line.

This simplest of devices is first to be squeezed out of tincture of iodine, and then to be used as a piston, drawn back and forth freely along the canal from end to end, the marrow at first being forced out by it like softest cheese. Thus the seat of danger is radically, yet gently, cleared away. It is infinitely safer than would be the use for such purpose of any sharp tool, capable of wounding at every stroke the enosteum and spreading infection by many *loci minoris resistentiæ* of the surgeon's own making!

Next the empty marrow canal is filled entirely full of freshly sterilized Beck's paste—com-

posed, as all know, mainly of vaselin and bismuth, heated. In case of need, this paste is re-injected at intervals of a few days until healing occurs, which usually is to be reliably expected.

Gentlemen, this is no new procedure that I present to you today. I have employed it for several years past in an active surgical practice in one of our large hospitals, and have described it more fully in the new edition of Wood's Reference Handbook in the article upon bone surgery. In conclusion, let me say that if ever I have saved life, I have done so in certain cases, otherwise dying of sepsis, by use of this pistoning method.

EIWEISS MILK.\*

By DOUGLAS P. ARNOLD, M.D.,  
BUFFALO, N. Y.

**A**LTHOUGH Eiweiss Milk is an old subject, I find it is not generally understood, so will make no apology for its introduction.

For years physicians working on the problem of artificial food for infants have endeavored to find the reason for the difference in tolerance for cow's and mother's milk. The proteid, fat and carbohydrate of cow's milk have, at various times, been blamed for the bad results, and it probably is true that the misfeeding of any one element can cause trouble. It was left for Professor Finkelstein and Dr. L. F. Meyer of Berlin, after careful clinical work, backed up by studies in metabolism, to devise the milk preparation of which I speak.

Chemically cow's milk and mother's milk are not unlike; to be sure the proteid of cow's milk is higher and is coagulated in coarser curds in the stomach.

The next most striking difference is in the salt content, or the whey. Mother's milk having .2 per cent. while cow's milk has .7 per cent.

Professor Finkelstein tried a unique experiment. He fed a series of babies on cow's milk casein, mother's milk whey mixture, and found that the babies thrived as though they were taking mother's milk. Oppositely, the babies taking a mixture of cow's milk whey and mother's milk casein were subject to the same troubles as the feeding of cow's milk. Thus he proved that the trouble lay in the whey—or more properly speaking, the whey concentration with a secondary pathologic fermentation of carbohydrates and fat.

The gut tract of the child being made for a .2 per cent. salt solution and being subjected to a .7 per cent showed injury to the cells, acting the same as a hypertonic salt solution would on the red blood corpuscle.

Following along these lines he devised his Eiweiss Milk.

What is it? How is it made?

A quart of good whole raw milk is taken; 2 teaspoonfuls of Fairchild's essence of pepsin are added; the mixture put in a pitcher and placed in

\* Read at the Annual Meeting of the Eighth District Branch of the Medical Society of the State of New York, at Niagara Falls, September 23, 1914.

a water bath at 60 degrees Centigrade, and held there ten minutes by means of a pilot light (the water should never come to a boil nor the temperature overstepped or a tough curd will result).

It is then removed from the fire and allowed to stand for one half hour at room temperature; the curd is then separated from the whey and placed in a cheesecloth bag and allowed to drip in a cool place until dry. This takes from two to four hours, but if large amounts are made it is best allowed to drip overnight. The curd is then worked through a fine hair sieve (30 mesh), four or five times, at the same time adding one pint of a low-acid buttermilk and one pint of water or q. s. to make the mixture a quart.

This is placed in a cooker with a beater\* and the mixture slowly brought to a boil. Coming to a boil should take ten or fifteen minutes. During this time the mixture is being stirred; the preparation is then taken off, the sugar added, the can placed in cold water and beaten until cool. It is now ready to use.

This seems a long, difficult, unnecessary procedure, and many modifications have been tried, always with failure, so would advise following the directions explicitly.

Now what have we?

A high proteid food with a finely divided curd and a fairly good fat content. The whey is the whey of butter milk or is in the mixture diluted one-half, thus the high salt content is partially rectified. The milk sugar, which is the carbohydrate of milk, is much reduced and the much less fermentable mixture of dextrin and maltose is added (Mead's dextrimaltose), and never less than three per cent. The acidity of the butter milk is important and should not run higher than 36. (Soxhlet Henkel scale, or the number of c. c. of  $\frac{1}{4}$  normal NaOH to neutralize 100 c. c. milk.)

The butter milk, besides supplying the whey gives an acidity, the nature of the good effect of which we know not.

|               | Eiweiss Milk<br>Contains.<br>Per cent. | Milk<br>Contains.<br>Per cent. |
|---------------|--|--------------------------------|
| Albumen ..... | 3                                      | 3                              |
| Fat .....     | 2.5                                    | 3.5                            |
| Sugar.....    | 1.5+dextrimaltose                      | 4.5                            |
| Ash .....     | .5                                     | 0.7                            |
| Acidity ..... | about 18                               |                                |

So we have a very nutritious food.

Calories 400 per quart or with 3 per cent carbohydrate which is always added 500 calories per quart, thus in order to feed a child its quota of 100 calories per kilo body weight we must give 200 c.c. of Eiweiss Milk per kg., but never more than one quart is fed in a day.

A few years ago it was the general idea that all of the acute gastro-intestinal upsets were due to infection of the gut tract, and whereas this is

true in a small percentage of cases, still Finkelstein has proven that most of these cases are primarily due to intestinal cell harm caused by whey concentration with an overstepping of food tolerance. This is strikingly shown when a case with a temperature of 106 and severe toxemia, after an early instituted tea period reacts with a normal temperature and a complete detoxication.

In fact, we do not look as much as formerly for the kind of flora of the intestinal tract but instead, we determine the variety of bacteria by the food we give; this at first glance seems queer, but it is nevertheless true. The frequent, acid, green, explosive stools are the fermentative stools caused by the whey concentration with the fermentative bacteria acting on the carbohydrates and fats. These saccarolytic bacteria produce irritative fatty acids with increased peristalsis and mucous. These stools waste the potassium and sodium salts with a consequent demineralization and relative acidosis which adds to the toxemia. There is also a large water loss depending on the type of child.

A child can be rated as a good or bad child, depending upon its water binding power or its water stability. Thus a child which has been fed on a poorly balanced high carbohydrate food may lose one-third of its weight in two days while another child having the same disturbance may lose slightly or not at all. Thus, the child's water binding power has a great deal to do with prognosis and treatment. Now in feeding Eiweiss Milk with its large proteid content and adding to it a sugar which is not easily fermented we get instead of pathologic fermentation a condition of putrefication which changes the acidity of the intestinal contents to alkalinity; the peristalsis is decreased, the intestinal contents pass slowly through the large gut with absorption of fluid and excretion of calcium and magnesium salts. These minerals unite with phosphoric acid to form the typical fat soap, clay colored, constipated stools of Eiweiss Milk. In these stools the potassium and sodium and water loss is stopped but the calcium and magnesium retention is lowered, but this does not mean a negative balance because of the increased ingestion.

When is Eiweiss Milk indicated?

1. In cases of diarrhoea (a) dyspepsia.  
(b) intoxication.
2. Decomposition (atrophy).

In some dyspepsias, especially if not severe, by careful feeding with skimmed milk or milk dilutions and low carbohydrates we can gradually, with the increasing tolerance, raise the quality of the mixture and finally bring about a normal condition of affairs, but there are cases which, in spite of this starvation diet, continue to have frequent, green, acid, fermented stools, and because of the frequency of the stools and the necessity of low feeding a consequent great loss of weight and a resultant serious condition, or in other words, a case which has not responded to the usual treatment.

In feeding Eiweiss Milk there is not the ten-

\*An ordinary two-quart granite kettle and a Dover egg-beater can be used.

dency to diarrhoea but to constipation, the fermentation is done away with, and because of the high food value there is no danger of inanition or decomposition.

Then there are those cases which because of starvation quantitative, or qualitative, or maybe from repeated dyspepsias, if given a tea period and placed on a skim-milk diet would die, or show grave signs of decomposition, *i. e.*, gray appearance, slow pulse, subnormal temperature, bad tissue turgor, etc.

These children we dare not starve, and still, if we give a food such as the child needs we overstep the child's tolerance and get a paradoxical reaction (a loss of weight to increased food). Then the child is worse off, or maybe dead. Yet when we keep the child on a low mixture or a mixture which lies under the child's tolerance it is far below the child's need and the child must lose and subsequently die.

So here we are caught between the devil and the deep sea. What is to be done?

We must find a food which is highly tolerated. Would the answer be breast milk? Yes, probably in the case of very young children. But it must be remembered that breast milk is poor in albumen and salts and these elements are an absolute necessity to the atrophic child or the child approaching this condition; for they are the most important elements to cell growth, the fastest growing animals being those richest in albumen and salts. In Eiweiss milk we have the necessary combination, *i. e.*, an easily assimilable highly nutritious, well tolerated food with no tendency to diarrhoea.

How do we feed Eiweiss milk?

The treatment is usually begun with a tea period or a weak tea sweetened with a saccharine tablet. This is given *ad lib.*, the object being to clean out the gut and by supplying water to prevent too great weight loss. Ordinarily we give:

12 hours for dyspepsia.

24 hours for intoxication.

From 3 to 6 hours for decomposition.

In this connection I must sound a note of warning.

I have already hinted that the cause of decomposition was

1. Dyspepsias, and
2. Hunger,

and as some cases have already been hard hit by these, as shown by their appearance and history, one more tea or starvation period would send them into collapse or death. Thus, we do not dare starve these children, and yet the fever and toxemia may indicate it. So here we are again facing a hard proposition, the solution of which rests with the experience of the observer, the history of the patient and condition of the child.

Sometimes instead of a tea period it is advisable to give whey one-half diluted; this whey contains some salts which give some water retention and the loss of weight is not so great.

We may order a starvation period and be

obliged to discontinue it and stimulate the child. Following this starvation period the temperature should drop to normal and the child should be less toxic. There is also a weight loss but if the treatment was not begun soon enough we may be obliged to start feeding in spite of the continuation of temperature because of the fear of inanition. If, after a tea period the temperature drops to subnormal with a great loss of weight, a slow pulse and gray appearance, we are dealing with a case of decomposition.

The usual way to begin the Eiweiss Milk is ten feedings of 10-20 c. c. each, increasing 100-200 c. c. every day until the child is getting enough to sustain life, *i. e.*, 100-150 c. c. per kg., or slightly under the required amount which is 200 c. c. per kg.

At the same time the frequency of the meals is reduced to five a day. In certain cases, if required, more frequent meals can be given but when a child can take the required amount in five meals a day the stomach gets a chance to completely empty and disinfect itself, and there is less likelihood of recurring dyspepsias.

These points must be remembered, *i. e.*, the child will probably continue to lose weight, and consequently look worse, and the stools may not change in character for the first few days; nevertheless, we must continue to increase the food and, depending on the case, improvement will first be shown by stationary weight, better stools, and better general appearance. The food can then be raised to the required amount and the 3 per cent carbohydrate raised to five. If the child then fails to gain and the stools are constipated a 7 or 10 per cent carbohydrate can, with care, be given, for Eiweiss Milk allows of a high carbohydrate addition.

In "decomposition" we usually begin with about 300 c. c. per twenty-four hours, for these children, as I have said, do not stand starvation. This is gradually raised every day, and carbohydrate increased. These children are hungry and take their food well. They also need more than 200 c. c. per kg. body weight for they not only require the elements for growth but also to make up the tissue waste.

In "decomposition" there is always a varying period during which the child does not gain in weight but it will improve in appearance. This is called the reparation period. Later the gain in weight begins. These cases must be worked up to, and fed at the height of their tolerance but the tolerance must not be overstepped for then we will get the paradox reaction with a dyspepsia.

The following simple rules may help:

After a child is taking enough food to satisfy the need,

1. Do not raise as long as the child is gaining; feed the smallest amount upon which it thrives.

2. Do not raise if there is diarrhoea or vomiting; it may be the beginning of trouble.

Lastly, I wish to say a few words on parenteral infection. Cases of parenteral infection should not always be reduced in food unless the result-

ing or secondary dyspepsia is severe. Then a tea period may be necessary, for I have already pointed out the danger of dyspepsia and hunger.

The length of time of treatment with Eiweiss Milk differs. In young children 1 to 4 or 5 months, while in older children a shorter time, two months is the average. When it is decided that the child can stand a milk mixture the change is instituted abruptly, and if the child does not gain after a few days trial it can again be placed on Eiweiss Milk.

All cases should be thoroughly examined to ascertain if the gastro-intestinal symptoms are not secondary to some infection or if the decomposition is not secondary to some disease, *i. e.*, tuberculosis, syphilis, etc.

From time to time glowing reports are published of feeding with powdered calcium casein preparations. I have seen most of these preparations used but have seen nothing but poor results. Just lately a Berlin chemist has perfected a dried Eiweiss Milk. We used it two months. In that length of time it looked good. I hoped to have some here but the war prevented.

Eiweiss milk is being used in many German and American clinics with good results, and I am confident that those people who do not attain these good results have either failed to make it correctly or failed to give it properly.

Since arriving home, through the courtesy of Doctor Irving Snow, I have fed several bad dyspepsia, intoxication, and decomposition cases with good results. The length of this paper and the number of cases do not warrant a detailed report.

### Correspondence

DR. JOHN COWELL MACEVITT,

Editor, NEW YORK STATE JOURNAL OF MEDICINE.

Dear Sir:—I note with interest that the paper by Dr. John B. Walker on "The Treatment of Fracture of the Neck of the Femur," has been reprinted in the last issue because of an interchange of abduction and adduction in the description of the technique.

Perhaps, if Dr. Walker had designated the treatment employed by him at Bellevue Hospital as the "Abduction Method," the printer's error would have been less confusing. At all events under this title it should by now be fairly well known, since it was fully described in the JOURNAL in 1909 and 1912, as well as in many other publications during the past fifteen years.

The purpose of this communication is to call attention to another error, or at least to an apparent confusion in Dr. Walker's mind as to the principles on which this treatment is based.

As he states it, "to obtain the complete or approximate restitution of the normal anatomical figuration of the bone two forces are necessary, longitudinal and lateral traction. These have been used by Maxwell and Bardenheuer, and especially developed by Bardenheuer and Whitman."

This conjunction is, it seems to me, unwarranted. The Maxwell and Bardenheuer methods are practically identical. Maxwell first described it in 1876 (*Chicago Med. Journal and Examiner*), having modified the Phillip's method of lateral traction (*Am. J. Med. Soc.*, Oct., 1869), by discarding the long side splint. Longitudinal traction is applied in the line of the body and with it is combined an antero-lateral traction force of about two-thirds the weight. Counter-

traction is secured by raising the foot of the bed and and tilting it laterally. The object of the lateral traction is to support the limb and "to make the trochanter prominent."

Bardenheuer (*Frakturen and Luxationen*, fig. 16, p. 56, 1907), directs the longitudinal traction to draw the limb somewhat inward and the lateral traction to draw the upper extremity of the femur outward. The chief difference between the Maxwell and the Bardenheuer treatments is that the latter, in some instances corrects resistant deformity under anæsthesia, and begins passive movements within a few weeks.

Lateral traction applied to make the trochanter prominent would, if sufficiently increased, actually pull the fragments away from one another. The abduction method on the contrary, by tension on the capsule makes the trochanter less prominent, and the greater the abduction the greater the pressure at the point of contact of the fragments.

The conventional traction treatment is based on the belief that reduction of shortening, apposition and retention of the fragments can be secured, if at all, only by a persistent pull upon the limb to resist the deforming influence of the muscles. As ordinarily applied it is practically futile. The addition of lateral traction adds an element of efficiency if it supports the limb at its proper level, and thus serves indirectly as a splint.

At best this treatment is uncertain. It requires constant supervision and thus division of responsibility. It necessitates confinement of the patient to the dorsal position with elevation of the foot of the bed—an attitude that predisposes to bedsores and to hypostatic congestion.

The abduction method is based on an entirely different principle, in which traction, lateral or otherwise, has no place, since the construction of the joint is utilized to correct deformity, to oppose the fragments by tension on the capsule, and to fix them securely by direct bony contact and pressure in an attitude in which muscular contraction is powerless as a deforming agent. This internal fixation is assured if the plaster spica holds the limb in an attitude of complete abduction and extension, even if it be so poorly applied as to be inefficient as a direct splint.

The abduction method is simple and definite. Its effects are demonstrable on inspection and they may be confirmed by X-ray examination. Aside from its technical efficiency it has the great advantage to the surgeon that it is completely under his control, and to the patient, that the support being independent of the bed, permits changes of attitude, and movement without discomfort or danger of displacement.

According to Dr. Walker "wherever the usually accepted principles of practice are followed, the results are uniformly unsatisfactory."

This statement is further illustrated by an investigation of cases treated in Bellevue Hospital in 1906 and 1907. Of these only fifteen patients (13 per cent) recovered with good function. It is also supported by Bissell from observation of the treatment of fracture of the neck of the femur in St. Vincent's, New York and Bellevue Hospitals, where the patients were under the charge of "sixteen well-known surgeons, many of them eminent teachers of surgery." His conclusions were that the treatment assured neither co-aptation nor fixation, and that operative intervention was indicated "as holding out a hope to a class of patients the vast majority of whom medical literature, and medical opinion and practice as well have hertofore given over as hopeless." (*Phil. Med. Journal*, May 30, 1903.)

It would appear from this and other evidence, notably the investigation of the British Fracture Committee, that conventional treatment is a failure, not because of the incapacity of the tissues for repair, but because this treatment has never assured the essentials of success, namely, apposition and retention of the fragments.

The abduction method is such a radical departure from accepted practice, traditional teaching and authority that it has made its way slowly in the face of the in-

difference and neglect that have always characterized the treatment of this injury.

Dr. Walker is the first, I think, to adopt it as a routine in a New York hospital. His testimony that it can be used satisfactorily by those untrained in its application, that it is more comfortable for the patients, and less exacting for the nurses than conventional methods, should encourage others to use it who have an interest in the welfare of their patients.

ROYAL WHITMAN.

283 Lexington Avenue, January 21, 1915.

## Notes from the State Department of Health

The department has had under advisement for some time the matter of a record book for health officers. It is found that there is no well-defined system of "bookkeeping" among health officers, so that it often happens that at the end of the year a health officer finds that he cannot account for very much work, although he has been busy most of the time. This is unfortunate because the layman is unable to correctly judge of the amount of work that a health officer does. Since the layman has to foot the bill, if he feels that the health officer's activities consist chiefly in tacking up a few quarantine signs he is not inclined to be very liberal in his award.

So far as we know, no form for a record book has been devised that is at all adequate. The record book that the department has planned provides for a list of the members of the Board of health, indicating their term of office; a section is prepared for recording the communicable diseases. Some of the headings are, name of patient, address, disease, laboratory findings, date of onset, date isolation begun, date isolation ended, the cleansing or disinfection, the physician, the date reported, occupation, school attended, result, remarks, etc. Next comes a division for recording complaints and nuisances, the date, the person against whom the complaint is made, the nature of the complaint, the investigation of the health officer, the action of the board, the date of abatement. Next there is a division for recording deaths that were without medical attendants. There is next a section for recording commitments for insanity, a section for registering permits for the sale of milk or the establishment of labor camps, a section for recording the inspection of public buildings and school houses. A provision is made for recording expenses, supplies received from the department and their disbursement, also a section is provided for inventory. Then lastly for miscellaneous record such as the health officer's annual reports, the record of the prevalence of any unusual disease, the report of the public health nurse, new ordinances, the record of labor certificates issued, etc. It is felt that if all this data is recorded from day to day the health officer will have no mean record to account for his activities at the close of the year.

The record book will last most health officers several years. It has 550 pages, is substantially bound, and may be obtained from the state printer at Albany. The expense for the book is, of course, a charge against the local municipality.

The department is also planning a cabinet for health officers. Considerable correspondence is carried on with health officers. Many circulars and numerous report cards and laboratory supplies are sent. If a place is not available for all these, they are soon lost, and a large amount of time is consumed in trying to find them. To meet this demand a cabinet about two feet broad, 18 inches high and 13 inches deep has been planned. Drawers with suitable partitions for filing cards, drawers for correspondence, shelves for the circulars, and a space for the record book and a compartment for laboratory supplies is provided. The cabinet will be in oak or sheet metal. It is expected that the cabinet will be ready about the first of March.

F. M. MEADER, M.D.,

Director Division of Communicable Diseases.

## Legislative Notes

STANDING COMMITTEES OF THE SENATE, 1915.

*On Judiciary.*—J. H. Walters, 935 University Building, Syracuse; G. E. Spring, Franklinville; A. J. Gilchrist, 249 Crescent Street, Brooklyn; C. T. Horton, 906 D. S. Morgan Building, Buffalo; M. S. Halliday, Ithaca; F. W. Cristman, Herkimer; A. W. Burlingame, Jr., 391 Fulton Street, Brooklyn; C. W. Walton, Kingston; C. D. Newton, Geneseo; E. R. Brown, Watertown; J. A. Foley, 66 Broadway, New York City; W. B. Carswell, 121 St. Marks Avenue, Brooklyn; R. F. Wagner, 244 E. 86th Street, New York City.

*On Public Education.*—C. C. Lockwood, 954 Greene Ave., Brooklyn; T. B. Wilson, Hall; M. S. Halliday, Ithaca; C. D. Newton, Geneseo; J. A. Hamilton, 897 Crotona Park N., New York; I. I. Joseph, 1421 Madison Ave., New York; G. W. Simpson, 468 W. 144th Street, New York.

*On Rules.*—E. R. Brown, Watertown; J. H. Walters, 935 University Building, Syracuse; H. M. Sage, Menands; G. F. Argetsinger, Rochester; R. F. Wagner, 244 E. 86th St., New York.

*On Public Health.*—G. H. Whitney, Mechanicville; W. M. Bennett, 15 William Street, New York; C. W. Wicks, Sauquoit; H. W. Doll, 49 Third Ave., New York; J. J. Dunnigan, 1861 Holland Ave., New York.

STANDING COMMITTEES OF THE ASSEMBLY, 1915.

*On Judiciary.*—F. B. Thorn, Erie County; J. L. Sullivan, Chautauqua County; H. Conkling, New York County; C. O. Pratt, Washington County; C. J. Fuess, Oneida County; E. A. Mackey, Delaware County; R. H. McQuiston, Kings County; J. L. Kincaid, Onondaga County; L. W. Gibbs, Erie County; C. E. Rice, Jr., New York County; C. D. Donohue, New York County; H. S. Schimmel, New York County; S. A. Cotillo, New York County.

*On Rules.*—T. C. Sweet, Oswego County; H. J. Hinman, Albany County; F. B. Thorn, Erie County; H. E. H. Brereton, Warren County; A. Macdonald, Franklin County; A. E. Smith, New York County; W. J. Gillen, Kings County.

*On Public Education.*—M. E. Tallett, Madison County; H. A. Murphy, Suffolk County; E. E. Ferry, Allegany County; R. T. Kenyon, Essex County; H. K. Walker, Chemung County; J. A. Harris, Monroe County; J. C. Allen, Dutchess County; E. S. Comstock, Rensselaer County; R. B. Oldfield, Steuben County; R. Graves, Erie County; D. C. Oliver, New York County; S. D. Stephens, Richmond County; C. J. Marasco, New York County.

*On Public Health.*—G. T. Seelye, Saratoga County; A. W. Fairbank, Clinton County; H. L. Grant, Lewis County; J. W. Preswick, Tompkins County; J. L. Kincaid, Onondaga County; R. B. Oldfield, Steuben County; E. S. Comstock, Rensselaer County; J. A. Harris, Monroe County; P. C. Jezewski, Erie County; N. Shapiro, Kings County; J. C. Campbell, New York County; J. F. Shannon, Rensselaer County; D. G. Donavan, New York County.

## Committee on Legislation

The Committee on Legislation urges the profession of the State to oppose the following bills. Apply to your Senator or Assemblyman for copies of bills not published in the JOURNAL.

L. K. NEFF,  
Chairman.

No. 35.—Int. 125.  
IN ASSEMBLY.

January 19, 1914.

Introduced by Mr. Tallett and referred to the Committee on Public Health.

AN ACT.

To amend the public health law, in relation to vaccination.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section three hundred and ten and three hundred and eleven of chapter forty-nine of the laws of nineteen hundred and nine, entitled "An act in relation to the public health, constituting chapter forty-five of the consolidated laws," are hereby amended to read, respectively, as follows:

Sec. 310. Vaccination of school children. [No child or person not vaccinated shall be admitted or received into any of the public schools of the state, and the trustees or other officers having the charge, management or control of such schools shall cause this provision of law to be enforced. They may adopt a resolution excluding such children and persons not vaccinated from such school until vaccinated, and when any such resolution has been adopted, they shall give at least ten day's notice thereof, by posting copies of the same in at least two public and conspicuous places within the limits of the school government, and shall announce therein that due provision has been made, specifying it, for the vaccination of any child or person of suitable age desiring to attend the school, and whose parents or guardians are unable to procure vaccination for them, or who are, by reason of poverty, exempted from taxation in such district.]

1. *Whenever smallpox exists in any school district or city, or in the vicinity thereof, and the state commissioner of health or the local board of health shall certify in writing to the school authorities in charge of any school or schools in such district or city, it shall become the duty of such school authorities to exclude from such schools every child or person who does not furnish a certificate from a duly licensed physician to the effect that such child or person has been successfully vaccinated with vaccine virus within one year from the date of the issuance of such certificate.*

2. *Whenever school authorities having the charge, management and control of schools in a district or city cause this provision of law to be enforced, the local board of health shall provide for the vaccination of all children whose parents do not provide such vaccination.*

3. *The expense incurred, when such vaccination is performed under the direction of the board of health, shall be a charge upon the municipality in which the board of health which directed vaccination has jurisdiction, and shall be audited and paid in the same manner as other expenses incurred by such local board of health are audited and paid. The local boards of health may in their discretion, provide for the payment of additional compensation to health officers performing such vaccination.*

Sec. 311. Vaccination how made; reports. [Appointment of physician. Such trustees or board may appoint a competent physician and fix his compensation, who shall ascertain the number of children or persons in a school district, or in a subdivision of a city school government, of suitable age to attend the common schools, who have not been vaccinated and furnish such trust-

tees or board a list of their names. Every such physician shall provide himself with good and reliable vaccine virus with which to vaccinate such children or persons as such trustees or board shall direct, and give certificates of vaccination when required, which shall be evidence that the child or person to whom given has been vaccinated. The expenses incurred in carrying into effect the provisions of this and the preceding section, shall be deemed a part of the expense of maintaining such school, and shall be levied and collected in the same manner as other school expenses. The trustees of the several school districts of the state shall include in their annual report the number of vaccinated and unvaccinated children of school age in their respective districts.]

1. *No person shall perform vaccination for the prevention of smallpox who is not a regularly licensed physician under the laws of the state. Vaccination may be performed by a physician at such periods of the year only and in such manner as may be prescribed by the state commissioner of health.*

2. *No physician shall use vaccine virus for the prevention of smallpox unless such vaccine virus is accompanied by a certificate of approval by the state commissioner of health, and such vaccine virus shall then be used for vaccination purposes within the period of time only specified in such approval.*

3. *Every physician performing a vaccination shall make an immediate report to the state commissioner of health upon a form prescribed by such commissioner setting forth the full name and age of the person vaccinated and, if such person is a minor, the name and address of his parents, the date of vaccination, the date of previous vaccination if any, the name of the maker of the vaccine virus and the lot or batch number of such vaccine virus.*

Sec. 2. This act shall take effect immediately.

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

No. 153. Int. 153.

IN SENATE.

January 20, 1915.

Introduced by Mr. Boylan and committed to the Committee on the Judiciary.

AN ACT

To prevent cruelty by conferring upon the Board of Regents of the University of the State of New York the power of supervision of experiments on living animals.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. On the first day of June, nineteen hundred and fifteen, and annually thereafter, the Board of Regents of the University of the State of New York shall designate and appoint such number of persons to represent said board as shall, in the judgment and discretion of said board, be necessary for the proper supervision of animal experimentation within the state. Any corporation formed under the laws of this state, one of the objects of which is to prevent cruelty in animal experimentation, may certify to the board of regents a list of names of persons whom such corporation deems suitable for appointment as such representatives, and the board of regents shall make all designations hereunder from the list of names so certified by such corporations.

No person so designated and appointed by said board as a representative thereof shall receive any compensation from the state for his or her service. The said board of regents shall furnish to each person so designated and appointed to represent said board a certificate under the seal of said board, and which said certificate shall contain the name and address of the person so appointed, the statement that such person is a representative of said board for the purpose of supervising experiments upon living animals performed

within the state of New York, the date of such appointment and duration thereof.

Sec. 2. Every place where experiments upon living animals are conducted shall at all times be open to and subject to entry and inspection by any representative of said board of regents designated and appointed in accordance with the provisions of section one of this act.

Sec. 3. Any person who excludes or assists either directly or indirectly in excluding any representative of the said board of regents from a place which he or she is empowered by this act to enter, or who prevents or attempts to prevent such representative from exercising the powers of inspection conferred on him or her by this act, or who being in such place, refuses to disclose his true name and residence to any such representative, is guilty of a misdemeanor, and shall be punished by imprisonment for not less than sixty days or more than one year, or by a fine of not less than one hundred dollars nor more than five hundred dollars, or by both such fine and imprisonment.

Sec. 4. This act shall take effect on the first day of June, nineteen hundred and fifteen.

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

No. 10. Int. 10.  
IN SENATE.

January 14, 1915.

Introduced by Mr. Boylan and committed to the Committee on the Judiciary.

AN ACT

To amend the education law, in relation to experimentation upon living animals in the common schools of the state.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Chapter twenty-one of the laws of nineteen hundred and nine, entitled "An act relating to education, constituting chapter sixteen of the consolidated laws," as amended by chapter one hundred and forty of the laws of nineteen hundred and ten, is hereby amended by adding thereto, after article twenty-six thereof, a new article, to be article twenty-six-a, to read as follows:

ARTICLE 26-A.

EXPERIMENTATION UPON LIVING ANIMALS.

Sec. 700. Vivisection and experiments upon living animals forbidden. No person shall, in any of the common schools in the several cities and school districts of the state, supported wholly or in part by public money of the state, practice vivisection, or perform any experiment upon a living animal, or exhibit to any pupil in such school an animal which has been vivisected or experimented upon.

Sec. 701. Enforcement of this article. On satisfactory evidence that any teacher has wilfully violated the provisions of this article, the commissioner of education shall revoke the license of such teacher.

Sec. 2. This act shall take effect immediately.

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

No. 342. Int. 336.

IN SENATE.

February 1, 1915.

Introduced by Mr. Lawson and committed to the Committee on Judiciary.

AN ACT

To create a Commission to investigate and report upon the condition of the practice of human and animal experimentation in this State and to recommend such changes as may be necessary in the laws to prevent useless cruelty to human beings or animals, and to protect children and other inmates of our charitable institutions from abuse and the invasion of their personal rights through unnecessary experimentation upon them without their consent.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The Governor is hereby empowered and directed to appoint a non-partisan commission which shall consist of seven (7) members, two (2) of whom shall be physicians or persons experienced in the practice of human and animal experimentation, and residing within this State, two (2) of whom shall be active members of some organization within this State having for its purposes the prevention of cruelty, but who shall not be physicians or persons engaged in the practices sought to be investigated, and the remaining three (3) members of which commission shall be lawyers residing within this State.

Sec. 2. Such commission shall fully investigate and report upon:

(a) The present condition and extent of the practice of experimentation upon human beings without their consent; especially upon children and other patients in charity hospitals, public charitable institutions or elsewhere within this State, by operations, inoculations or by any other form of treatment or tests not undertaken solely for the direct benefit of the individuals experimented upon and not having relation to their individual necessities. It shall also report what further laws are necessary to protect such persons from any injury and from any interference with their personal rights by such practice or by the abuse thereof.

(b) It shall also investigate and report upon the condition and extent of the practice of experimentation on living animals in this State and upon the amount of avoidable cruelty or suffering involved therein; and shall also make a full inquiry into the condition of the law of this State for the protection, regulation and license of scientific investigation or research of this character. It shall also consider the condition and effectiveness of the law for the prevention of abuse in such practice. It shall inquire what further legislation or other safeguards may be needed to prevent unnecessary suffering of animals through such practice or through its abuse, without interfering with legitimate scientific research.

Section 3. For the purposes of this investigation the said commission is hereby authorized and empowered to subpoena witnesses; to send for persons or papers; to administer oaths and to examine witnesses and papers respecting all matters pertaining to this subject. It shall be authorized to employ necessary clerical or other assistants. For this purpose the sum of five thousand dollars or so much thereof as is necessary is hereby appropriated.

This commission shall serve without compensation, and shall make a full and final report to the Governor, including such recommendations for legislation as in its judgment seem proper, within one year after its appointment.

Sec. 4. This act shall take effect immediately.

BILLS INTRODUCED INTO THE LEGISLATURE.

IN SENATE.

January 6 to February 22, 1915.

Amending section 171, Public Health Law, by regulating the registration of physicians in a new county created by act of the Legislature from an existing county, thereby placing their officers or practice in a new county. (Same as A. 36.) By Mr. Dunnigan. To Public Health Committee. Printed No. 26. Int. 26.

Amending article 11-a, Public Health Law, prohibiting the sale of habit-forming drugs, by making violation a felony. (Same as A. 70.) By Mr. Hamilton. To Public Health Committee. Printed No. 37. Int. 37.

Amending section 21, Public Health Law, by striking out the present limitation upon the amount of compensation of local health officers to the equivalent of ten cents per inhabitant in cities, towns and vil-

lages of 8,000 or less, and \$800 per annum in cities, towns and villages of more than 8,000. (Same as A. 145, 278.) By Mr. Walton. To Public Health Committee. Printed No. 159. Int. 159.

Amending section 1169, Greater New York Charter, by providing that board of health may order holding of autopsies and making of microscopic and bacteriological examinations of remains of persons reported deceased from contagious or infectious diseases. (Same as A. 280.) By Mr. Boylan. To Cities Committee. Printed No. 179. Int. 179.

Adding new section 4-d to Public Health Law, authorizing the commissioner of health to appoint a sanitary inspector for second class cities and fix his compensation at not exceeding \$2,500. The inspector is to inspect sanitary conditions and the enforcement of the building code in second class cities. (Same as A. 283.) By Mr. Cullen. To Public Health Committee. Printed No. 197. Int. 197.

IN ASSEMBLY.

Amending sections 307 and 308, Public Health Law, by prohibiting a person not holding a certificate of registration or exemption from selling or offering for sale spectacles, eyes glasses or lenses, and forbidding the improper use of the title "Doctor" by persons practicing optometry. By Mr. Feinberg. To Public Health Committee. Printed No. 11. Int. 11.

Amending sections 245, 246 and 249-d, Public Health Law, by making violation of the provisions against the sale and possession of habit-forming drugs a felony, punishable by imprisonment of not more than a year, or by fine of not more than \$1,000, or both. By Mr. Evans. To Public Health Committee. Printed No. 33. Int. 33.

Amending section 171, Public Health Law, by regulating the registration of physicians in a new county created by act of the Legislature from an existing county, thereby placing their offices or practice in a new county. (Same as S. 26.) By Mr. Evans. To Public Health Committee. Printed No. 36. Int. 36.

Amending article 11-a, Public Health Law, prohibiting the sale of habit-forming drugs, by making violation a felony. (Same as S. 37.) By Mr. Fertig. To Public Health Committee. Printed No. 70. Int. 70.

Amending section 21, Public Health Law, by striking out the present limitation upon the amount of compensation of local health officers to the equivalent of ten cents per inhabitant in cities, towns and villages of 8,000 or less, and \$800 per annum in cities, towns and villages of more than 8,000. (Same as A. 278, S. 159.) By Mr. De Witt. To Public Health Committee. Printed No. 145. Int. 145.

Adding a new section, 1743-a, to Penal Law, making it unlawful to sell at wholesale or retail any package or bottle containing a preparation intended or commonly used for beverage purposes unless it is labelled "This preparation contains alcohol, which is a habit-forming, irritant, narcotic poison." By Mr. Ferry. To Codes Committee. Printed No. 179. Int. 179.

Adding a new section, 1743-b, to the Penal Law making it a misdemeanor to advertise for sale any preparation intended or commonly used for beverage purposes, which contains more than 2 per cent by weight of alcohol, unless the advertisement contains the words "This preparation contains alcohol, which is a habit-forming, irritant, narcotic poison." By Mr. Ferry. To Codes Committee. Printed No. 181. Int. 181.

Authorizing the submission of a proposition to the electors of Jefferson County providing for an expenditure of \$25,000 additional for the establishment of a tuberculosis hospital. (Same as S. 109.) By Mr. Machold. To Internal Affairs Committee. Printed No. 191. Int. 191.

Amending section 1169, Greater New York Charter, by providing that the board of health may order holding of autopsies and making of microscopic and bacteriological examinations of remains of persons reported deceased from contagious or infectious diseases. (Same as S. 179.) By Mr. Kerrigan. To Cities Committee. Printed No. 280. Int. 280.

## Medical Society of the State of New York

MEDICAL SOCIETY OF THE COUNTY OF  
FRANKLIN.

ANNUAL MEETING, AT MALONE, DECEMBER 8, 1914.  
BUSINESS SESSION.

The Comitia Minora met at 11 A. M.

The Society was called to order by the President, W. H. Harwood, M.D., at 11.30, twenty-one members being present.

The minutes of the last meeting were read and approved. Report of the Comitia Minora was read and approved.

The following officers were elected for the ensuing year:—President, J. Woods Price; Vice-President, Reuben W. Van Dyke; Secretary and Treasurer, George M. Abbott; Censor, Harry A. Bray.

The Secretary reported that in addition to four new members just elected, four new members had been elected during the year and one transferred to this Society from the Albany County Society. Two members had been transferred to other county societies and one member had resigned. Present membership, forty-eight.

Treasurer reported that all bills were paid to date and a balance on hand of \$226.54; by vote the reports were accepted as read.

The President appointed F. W. McCarthy, a member of the new Membership Committee in place of William N. MacArtney, who declined to serve. It was moved, seconded and carried that hereafter it shall be the duty of the Vice-President to deliver an address at the regular semi-annual meeting.

The President read a communication from Grover W. Wende, M.D., President of the Medical Society of the State of New York, calling attention to measures introduced into the last State Legislature to legalize the practice of Christian Scientists, Naturopaths, Chiropractors, etc., also one to give Osteopaths all the rights and privileges of regular licensed physicians. Two of the bills, the Christian Science and Osteopathic, passed both houses of the legislature, but were vetoed by the Governor. The other two passed the Senate by a large majority, but were killed in the Assembly. He spoke of the great danger of the same bills or similar ones being introduced into the coming session and urged every member of this Society to do all in his power to prevent any such measures from being enacted.

After considerable discussion it was moved, seconded and carried that the President-elect, J. Woods Price, be instructed to write two letters, one to the Senator and the other to the Member of Assembly from this district urging them to vote and use their influence against any measures being enacted that would lower the standard of the Medical Practice Act as it exists on the statute books of this state at the present time, these letters to be sent to every member of the Society to be signed and then mailed to the Senator and Assemblyman from this district.

Moved, seconded and carried that the President-elect write to the President of the Medical Society of the State of New York informing him of the action taken by this Society.

The meeting adjourned at 12.45 for dinner.

### SCIENTIFIC SESSION.

"Bone Transplantation," John D. Harrigan, M.D., Malone.

Discussion—Drs. Thurber and White.

"The Family Physician as a part of the State Department of Health," John A. Smith, M.D., Sanitary Supervisor, Saranac Lake.

Discussion by Reuben W. Van Dyke, Clarence A. Hastings, Watson H. Harwood, Malone, and Harry A. Bray, Ray Brook.



Report of a case of "Aortic Aneurism, with Signs and Symptoms Indicating a Pulmonary Lesion," Harry A. Bray, M.D., Malone.

The President read a very interesting article from a medical journal on "Twilight Sleep."

MEDICAL SOCIETY OF THE COUNTY OF  
YATES.

ANNUAL MEETING, AT PENN YAN, JANUARY 5, 1915.  
BUSINESS SESSION.

Due to the absence of the President, John A. Conley, who is sojourning in Florida, the Vice-President, Herbert W. Matthews, presided.

The following officers were elected for the ensuing year:—President, Herbert W. Matthews; Vice-President, Festus M. Chaffee; Secretary, George E. Welker; Treasurer, Franklin S. Sampson. Delegate to State Society, E. Carlton Foster; Alternate, Charles E. Doubleday. Censors, Charles E. Doubleday, George E. Stevenson and Festus M. Chaffee. Legislative Committee, C. E. Doubleday, Edward M. Scherer and G. Howard Leader.

Several committees were appointed to take up, with various health boards, the matter of sanitation, etc.

The Yates County Society claims the distinction of being the premium County Society as to the proportion of medical men in the county who are members of the County Society. There are but five practising physicians in the county who are not members of the Society. The attendance at all meetings is very encouraging.

An address was given by the President of the Seventh District Branch, William T. Shanahan, M.D., of Sonyea, who was a guest of the Society.

SCIENTIFIC SESSION.

The Secretary read the annual address of the President, John A. Conley, M.D., Penn Yan.

"Ectopic Pregnancy," E. Carlton Foster, M.D., Penn Yan.

"A Consideration of Some Pathological Conditions of the Naso-Pharynx," G. Howard Leader, M.D., Penn Yan.

MEDICAL SOCIETY OF THE COUNTY OF  
LIVINGSTON.

REGULAR MEETING, AT AVON, TUESDAY, JANUARY 5, 1915.  
BUSINESS SESSION.

The question of legislation inimicable to the medical profession, and therefore to the public, was considered and a Committee on Legislation was appointed consisting of:—F. J. Bowen, W. T. Shanahan and G. K. Collier.

Dr. and Mrs. Strassenburgh entertained the Society at luncheon. During the noon recess a meeting, presided over by C. V. Patchin, District Sanitary Supervisor, was held of the Health Officers of Livingston County, who were present at the County Society meeting.

An invitation extended by William T. Shanahan, Medical Superintendent of Craig Colony for Epileptics, to hold the next meeting at Sonyea, on the first Tuesday in May was accepted with thanks.

SCIENTIFIC SESSION.

Clinical Relations of the Ductless Glands," Seelye W. Little, M.D., Rochester.

Discussion—J. P. Brown, M.D., Nunda; W. T. Shanahan, M.D., Sonyea; F. J. Bowen, M.D., Mt. Morris; G. K. Collier, M.D., Sonyea.

"Methods in Diagnosis," W. D. Johnson, M.D., Batavia.

Discussion—F. J. Bowen, M.D., Mt. Morris; J. P. Brown, M.D., Nunda; Squires, M.D.; G. K. Collier, M.D., Sonyea; F. V. Foster, M.D., Caledonia; Guinan, M.D.

A vote of thanks was extended to Dr. and Mrs. Strassenburgh for their entertainment, and to all who contributed to the scientific program. The meeting adjourned at 4.30.

MEDICAL SOCIETY OF THE COUNTY OF  
ALBANY.

REGULAR MEETING, AT ALBANY, THURSDAY,  
JANUARY 14, 1915.

SCIENTIFIC SESSION.

SYMPOSIUM UPON CARCINOMA OF THE STOMACH.  
"Diagnosis and Medical Treatment," Jerome Myers, M.D., Albany.

"Skiagraphic Diagnosis," with lantern slide demonstrations, J. M. Berry, M.D., Albany.

"Surgical Treatment," E. A. Vander Veer, M.D., Troy.

Discussion opened by L. H. Neuman, M.D., Albany.

An address, with demonstrations, on "Radium and Radioactive Substances; Their Production and Use," C. Everett Field, M.D., Radium Research Laboratories, Pittsburg, Pa.

Dr. Field showed specimens of the ores from which radium is produced, described its production, showed the finished products, and demonstrated their mode of application.

ONTARIO COUNTY MEDICAL SOCIETY.

REGULAR MEETING, AT CANANDAIGUA, TUESDAY,  
JANUARY 12, 1915.

BUSINESS SESSION.

The following resolution was passed:

WHEREAS, It appears that there is to be an effort made by certain cults of healing to secure laws placing themselves on the same standard with that now occupied by the recognized medical professional without complying with the preliminary requirements now demanded; and,

WHEREAS, It appears that this would be an unwarranted lowering of the standard of medical practice in this state to the detriment of public health, we, the Ontario County Medical Society, in regular meeting assembled do hereby

Resolve, That we will oppose as a Society and as individuals with all our power any effort to pass any such legislation; and be it further,

Resolved, That a copy of these resolutions be spread on the minutes of this meeting, copies sent to the senator and member of assembly from this district and to the Chairman of the Committee on Legislation of the State Society.

THE MEDICAL SOCIETY OF THE COUNTY OF  
WYOMING.

REGULAR MEETING, AT CASTILE, JANUARY 12, 1915.

BUSINESS SESSION.

The resignation from membership of Dr. A. Dorothea Payne, of Warsaw, was read and accepted. Dr. Payne having given up her practice and offered herself to the Red Cross work in England, her native land.

The President appointed the following Committees on Legislation:—M. Jean Wilson, George S. Skiff, Philip S. Goodwin and George H. Peddle. Subsidiary Committee, George S. Skiff and Philip S. Goodwin.

Dr. Wilson moved that the Society place itself on record as being opposed to any legislation allowing Christian Scientists, Chiropractors and the like to practice without a licensing examination. Carried.

SCIENTIFIC SESSION.

President's Address—"Aims of the County Society," William R. Thomson, M.D., Warsaw, N. Y.

"Anæsthesia," Lemar M. Andrews, M.D., Warsaw, N. Y.

Some interesting cases were reported.

MEDICAL SOCIETY OF THE COUNTY OF  
MONTGOMERY.

ANNUAL MEETING, AT AMSTERDAM, DECEMBER 9, 1914.

BUSINESS SESSION.

The reports of the officers and of the Comitia Minora were read and approved as read.

The following officers were elected for the ensuing

year:—President, Edward J. Collier; Vice-President, Charles P. Wagner; Secretary, William R. Pierce; Treasurer, Charles F. Timmerman. Delegate to State Society, Winfield S. Kilts; Alternate, Clark E. Congdon. Censors, Charles Stover, Edmund F. Bronk and Alonzo B. Foster.

The President appointed the following committees:—Legislation, James B. Conant, Lew H. Finch, Charles Stover, Charles F. Timmerman and Edward J. Abbott; Health, Horace M. Hicks, Edward C. La Porte, Arthur V. H. Smyth, Archibald M. Gilbert and Frank V. Brownell; Necrology, Charles Stover, Horace M. Hicks and Lew H. Finch.

The annual address was presented by the President, Stephen J. H. Reed, M.D., Fultonville.

#### TOMPKINS COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, AT ITHACA, TUESDAY,  
DECEMBER 8, 1914.

##### BUSINESS SESSION.

The following officers were elected for the ensuing year:—President, Howard B. Besemer; Vice-President, George M. Gilchrist; Secretary, Wilbur G. Fish; Treasurer, Esther E. Parker. Censors, Chauncey P. Biggs, Willets Wilson, Luzerne Coville, John W. Judd and Charles W. Webb.

The following addition to the By-Laws was adopted:

Chapter II, Section 1-a. Graduates in medicine, Veterinary Medicine, and allied sciences, engaged in teaching or in scientific research in subjects allied to medicine in Cornell University, at Ithaca, N. Y., are eligible for active membership in the Medical Society of the County of Tompkins, the Sixth District Branch, and the Medical Society of the State of New York.

#### ONONDAGA MEDICAL SOCIETY.

ANNUAL MEETING, AT SYRACUSE, TUESDAY, DECEMBER 8,  
1914.

##### BUSINESS SESSION.

The following officers were elected for the ensuing year:—President, John C. Parsons; Vice-President, George M. Price; Secretary, Henry B. Doust; Treasurer, Raymond J. Stoup. Censors, Edward S. Van Duyn, William Muench. Delegate to the State Society, Joseph Wisemann. Delegates to Fifth District Branch, William D. Alsever, Edward Reifenstein.

A Subsidiary Legislative Committee was appointed consisting of Frederick W. Sears, Henry Elsner, Dwight H. Murray, William A. Beucheler, to act with the regular Committee on Legislation, consisting of George B. Broad, Benjamin F. Chase, Royal A. Whitney, Joseph Wisemann, Albert F. Larkin and Thomas H. Halsted, to take action in our legislative inaction in opposition to our present medical practice act.

##### SCIENTIFIC SESSION.

"Radio-Therapy," I. Harris Levy, M.D., Syracuse.  
Case Report, Nathan W. Sears, M.D., Syracuse.

#### ONEIDA COUNTY MEDICAL SOCIETY.

THE ANNUAL MEETING, AT UTICA, TUESDAY,  
JANUARY 12, 1915.

##### BUSINESS SESSION.

The following officers were elected for 1915: President, Morris J. Davies, M.D., Utica; Vice-President, William B. Roemer, M.D., Utica; Secretary, Daniel E. Pugh, M.D., Utica; Treasurer, T. Wood Clarke, M.D., Utica.

##### SCIENTIFIC SESSION.

"Thyroidia," Thomas Z. Jones, M.D., Waterville.  
"The Milk Supply in Small Cities," Conway A. Frost, M.D., Utica.

## 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.

CHILD TRAINING AS AN EXACT SCIENCE, A Treatise Based on the Principles of Modern Psychology, Normal and Abnormal. By GEORGE W. JACOBY, M.D., Fellow N. Y. Academy Medicine, Member American Medical Asso., American and New York Neurological Societies. Consult. Neurologist Hospital Nervous Diseases, German, Beth Israel and Red Cross Hosps. Illustrated. Funk & Wagnalls Co., New York and London. 1914. Price, \$1.50 net.

A TEXT BOOK FOR MIDWIVES. By JOHN S. FAIRBAIN, M.A., B.M., B.Ch. (Oxon.), F.R.C.P. (Lond.), F.R.C.S. (Eng.), Obstetric Physician, with charge of out-patients and maternity ward, St. Thomas' Hosp.; Lecturer on Midwifery, St. Thomas' Hosp. Medical School, General Lying-In Hosp. Three plates and 104 illustrations, five in color. London, Henry Frowde, Hodder & Stoughton, Warwick Square, E. C., Oxford Univ. Press, 35 West 32d Street, New York City. Price, \$3.75.

MENTAL MEDICINE AND NURSING, for use in training schools for nurses and in medical classes and a ready reference for the general practitioner. By ROBERT HOWLAND CHASE, A.M., M.D., Physician-in-Chief, Friends Asylum for the Insane, Late Resident Physician, State Hospital, Norristown, Pa., Member of the American Medico-Psychological Asso. and Neurological and Psychiatric Societies, Phila. Seventy-eight illustrations. J. B. Lippincott Company Philadelphia and London. Price, \$1.50.

A NURSING MANUAL FOR NURSES AND NURSING ORDERLIES. By DUNCAN C. L. FITZWILLIAMS, M.D., Ch.M., F.R.C.S., Surg.-in-Charge Out-Patients and Lecturer Clinical Surgery, St. Mary's Hospital; Sr. Asst. Surgeon, Paddington Green Children's Hospital. Price, \$2.00. Oxford University Press, 35 W. 32d Street, New York City. London: Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. 1914.

TEXT BOOK OF MASSAGE AND REMEDIAL GYMNASTS. By L. L. DESPARD, Member and Examiner Incorporated Society of Trained Masseuses. Second edition. London, Henry Frowde, Hodder & Stoughton, Warwick Sq., S. C.; Oxford University Press, 35 West 32d Street, New York City. Price, \$4.50.

FEVER—ITS THERMOTAXIS AND METABOLISM. By ISAAC OTT, A.M., M.D., Professor of Physiology Medico Chirurgical College, Philadelphia; Member of American Physiological Society, Ex-President of American Neurological Association, etc., etc. 166 pages, 14 illustrations. Paul B. Hoeber, New York City, 1914. Price, \$1.50 net.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, etc. By leading members of the medical profession. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, with the collaboration of JOHN A. WITHERSPOON, M.D., A. MCPHERAN, M.D., FRANK BILLINGS, M.D., CHAS. H. MAYO, M.D., SIR WM. OSLER, M.D., JOHN G. CLARK, M.D., JAMES J. WALSH, M.D., etc. Volume IV. Twenty-fourth series, 1914. Philadelphia and London: J. B. Lippincott Company.

## Book Reviews

**THE PRACTICE OF SURGERY.** By JAMES G. MUMFORD, M.D., Lecturer on Surgery in Harvard University. Second edition, thoroughly revised. Octavo volume of 1,032 pages with 683 illustrations. Philadelphia and London: W. B. Saunders Company. 1914. Cloth, \$7.00. Half morocco, \$8.50. W. B. Saunders, Philadelphia and London.

The second edition of this work has been revised and brought abreast of the times. The author assumes the readers preliminary training. The principles of surgery are dealt with only, incidentally. This is essentially a practical work from the clinical standpoint.

The book is not planned in a conventional way. Diseases are discussed in order of their interest, importance and frequency. It is divided into seven parts, The Abdomen, Female Organs of Generation, Genito-Urinary Organs, The Chest, Face and Neck, Head and Spine, and Minor Surgery.

The work is written in a discursive manner and is admirably adapted for reference by the advanced student. The author's extensive experience in bed-side teaching and active private surgical practice, admirably fits him to present this splendid authoritative work.

We are glad that he has considered it a duty to lay before us the result of his years of endeavor. One would have no hesitation in accepting the teaching of this master-scholar.

The illustrations are profuse and excellent. They serve well to emphasize the text.

ROYALE H. FOWLER.

**A MANUAL OF X-RAY TECHNIC.** By ARTHUR C. CHRISTIE, Captain Medical Corps, U. S. A. Army; Instructor Radiography and Operative Surgery, Army Medical School, Washington, D. C. With 42 Illustrations. J. P. Lippincott Co., Philadelphia and London. 1913. Price, \$2.00.

As Dr. Christie well states in his preface: "This short manual on the technic of X-ray examination has been prepared with a view to the needs of the medical service of the U. S. Army," and "the book may also be found useful by that increasingly large number of physicians and surgeons in private practice who find it necessary or expedient to do their own X-ray diagnosis."

Of the 100 pages of text, 64 are devoted to a study of the apparatus and the technic of radiography. This portion is especially complete in its dealing with the various types of apparatus, and is very full in its explanation of each type. The details of the dark room technic are concise, but at the same time present that subject fully.

The second half of the book, beginning with Chapter VIII, deals with a study of the various conditions encountered in X-ray examination, and the author describes very well the changes appearing on the X-ray plate in various conditions under discussion.

No attempt has been made to present a complete thesis on the study of any one part or condition, but rather to present in a concise manner the field of radiography.

Dr. Christie's little book is a compendium, rather than a monograph. The illustrations are relatively few, but are very well presented.

CHARLES EASTMOND.

**A HANDBOOK FOR THE POST-MORTEM ROOM.** By ALEXANDER G. GIBSON, M.D. (Oxon.), F.R.C.P., University Demonstrator Pathology, Oxford, and Hon. Asst. Pathologist Radcliffe Infirmary, Oxford. London, Henry Frowde, Hodder & Stoughton. 1914.

This little manual is an excellent beginners guide to post-mortem work. The author considers in eight chapters, general arrangements, instruments, external examination, together with the best methods of removal of organs, examination of organs after removal, of

body cavities and sense organs. The concluding chapter is devoted to special autopsy technic. The book ends with methods of restoration of the body and preservation of organs.

The book is instructive and suggestive. The matter is presented in brief form and outlines the essential elementary topics. The book is sufficiently well illustrated to elucidate the text.

ROYALE H. FOWLER.

**MATERIA MEDICA, PHARMACOLOGY, THERAPEUTICS AND PRESCRIPTION WRITING.** For Students and Practitioners. By WALTER A. BASTEDO, Ph.G., M.D., Associate in Pharmacology and Therapeutics, Columbia University. Octavo of 602 pages, illustrated. Philadelphia and London: W. B. Saunders. 1913. Cloth, \$3.50 net.

To review any work on materia medica is no mean task as the reviewer must choose between the appreciation of the book as a whole and an individual critique of its component parts. Dr. Bastedo has departed from the standard form of text-book in both of these ways to the great advantage of the subject which has been robbed of much of its dryness in consequence. For instance, such a discussion as that devoted to digitalis and strophanthus with the excellent reproductions of cardiographic tracings must emphasize to the student the practical as well as theoretical side of digitalis medication. The list of drugs dealt with is widely inclusive and shows excellent balance in the space devoted to those of minor importance. The arrangement of the sections also helps to make reference easy as well as to place emphasis on each of the different aspects of the drugs. Altogether the work is of real excellence and is one that will repay a careful reading.

HENRY G. WEBSTER.

**NASAL ACCESSORY SINUSES: DEVELOPMENT AND ANATOMY OF THE NASAL ACCESSORY SINUS IN MAN.** Based on 290 lateral nasal walls, showing the various stages and types of development from the sixtieth day of fetal life to advanced maturity. By WARREN B. DAVIS, M.D., Corinna Borden Keen Research Fellow, Jefferson Medical College, Philadelphia. Octavo 172 pages, 57 original illustration. Philadelphia and London. W. B. Saunders. 1914. Cloth, \$3.50 net.

This anatomical work on the nasal accessory sinuses, aims to describe the development of these cavities from a comparatively early stage of fetal life throughout childhood to their fully adult size. Its object is to demonstrate graphically (chiefly by its series of plates and explanatory text) the development of the nasal sinuses from early embryonic (60 days estimated) to adult life.

The book is well arranged and its contents are presented clearly and concisely. It forms a valuable work of reference for students and practitioners of nasal surgery. A catalogue of its chapters shows the scope of the work. It treats of the following subjects: Anatomic Material Used; Method Used in Obtaining and Preparing Specimens; Embryologic Considerations; The Cellulæ Ethmoidalis, with subheadings on the cellulæ ethmoidales anterior and posterior and on the cellulæ conchales; The Sinus Maxillaris; The Sinus Frontalis, including subheadings on supernumerary sinus frontales and on the form and boundaries of the sinus frontalis, and Bibliography. The style is brief, concise and to the point. Being anatomical in its aim, but few references are made to pathologic conditions and none to treatment. The drawings of the sections of the nasal regions are excellent and are far superior to photographs of the nose and sinuses which the reviewer has used with but indifferent results. The book is one that meets a want and is commended also from its concise arrangement and for its many and excellent drawings, with full explanatory text of each illustration on the same sheet.

WILLIAM C. BRAISLIN.

**RADIUM THERAPEUTICS.** By N. S. FINZI, M.B. (Lond.). M.R.C.S., L.R.C.P., L.S.A., Chief Assistant in the X-ray Department, St. Bartholomew's Hospital. Price \$2.00. London, Henry Frowde, Hodder & Stoughton, Warwick Square, E. C.; Oxford University Press, 35 West 32d Street, New York, 1913.

This volume of 112 pages, including the index, is a clear and concise exposition of the radium question, as it is understood today. The book is divided into six chapters, an appendix and index.

The first twelve pages is devoted to the general discussion of radium, its discovery, different rays, emanations, etc.

The second chapter deals with the internal administration of radium and radium waters. Third with the histology, physiology and pathological action of radium radiations; fourth, with the apparatus and methods of application. The fifth and sixth chapters consider the different diseases that can be treated by radium. In the appendix is considered the other substances that are more or less radio-active, as thorium and uranium. This work shows evidence of having been written by one who knows the subject and for its very conservative tone it should be read by every one who is interested in the subject, for here he would find the truth.

W.

**THE ELEMENTS OF BACTERIOLOGICAL TECHNIC.** By J. W. H. EYRE, M.D., Director Bacteriological Department, Guy's Hospital, London. Second edition, rewritten and enlarged. Octavo of 518 pages, 219 illustrations. Philadelphia and London: W. B. Saunders. 1913. Cloth, \$3.00 net.

This book, although beyond the scope of the general practitioner, is indispensable to the laboratory worker. It is an excellent reference book. The receipts for the numerous laboratory media, the formulæ for the innumerable laboratory stains, the procedures for the important serological and biological tests, and the numerous steps in bacteriological technique can all be found minutely described in this important work. It is really and truly a very useful book and should be found in every laboratory.

WILLIAM LINTZ.

## In Memoriam

L. BOLTON BANGS, M.D.

MEMORIAL AND RESOLUTIONS ON THE DEATH OF DR. L. BOLTON BANGS, READ AND ADOPTED AT THE STATED MEETING OF THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, DECEMBER 28, 1914.\*

In the death of Dr. L. Bolton Bangs, on October 4th last, the medical profession has lost a notably representative member, and the community a sterling citizen who stood high in the esteem of his contemporaries everywhere.

Dr. Bangs was graduated from the College of Physicians and Surgeons, New York, in 1872. After serving on the interne staff of Bellevue Hospital, he and the late Dr. William T. Bull—always close friends—studied together in Vienna and in Berlin. On his return he became associated with the late Dr. Fessenden N. Otis, thus becoming identified with the pioneer period of genito-urinary surgery in this country, long before the science and art of urology had been developed or had even begun to be differentiated from the then more comprehensive field.

Dr. Bangs wrote but little in the early part of his career; apparently he waited until an accumulated experience could furnish material for his papers and give weight to his conclusions. A remarkably keen and discriminating power of clinical observation, made that

accumulated experience noteworthy, and won for his writings a deserved recognition.

In 1898, in collaboration with Dr. W. A. Hardaway, he edited the "American Text-Book of Genito-Urinary Diseases, Syphilis and Diseases of the Skin."

Hospital appointments and official positions in various medical societies were given to Dr. Bangs in no moderate measure. At the time of his death, he was consulting surgeon to five hospitals in Greater New York, and was an Emeritus Professor of the New York Post-Graduate Medical School and Hospital. The constructive character of his work during the years of his active connection with that institute as the Professor of Genito-Urinary Surgery from 1889 to 1894, will live in it forever, though the sacrifices he made for its welfare have become somewhat forgotten in the intervening years. From 1898 to 1901, Dr. Bangs was Professor of Genito-Urinary Surgery in the University and Bellevue Hospital Medical School. In deference to his health, he resigned—much to the regret of all, both faculty and student body.

Always an enthusiastic worker, and enjoying the inspiration that teaching gave him, he threw himself so completely into the careful preparation and presentation of his lectures and clinics, that he won the admiration, regard, and responding enthusiasm of his students, both post-graduate and under-graduate. It was said of him: "His skill and knowledge are unquestionable, and, in addition, he has that rare quality of a successful man—modesty." To this we may add: "He was resolute, moderate, clear of envy, yet not wanting in that finer ambition which makes men great and pure." Alert, resourceful, quick to perceive and to comprehend, apt in illustration, fluent in speech and elegant in diction, generous, sympathetic, whole-hearted, high-minded and clean, no wonder that friends, the associates in his office, students and patients admired and loved him. During the last three years of his life he worked on, giving comfort in mind and body to many; but the loss to himself in physical and mental energy was greater than could be restored. As was his wish—he died in harness.

Such were the career and the personality of him whom we do well to honor as we can and may this evening. Absorbed by his profession and jealous of its reputation; devoted to his patients and unsparing of himself, both brain and body, for their sakes, he was the ideal physician in that he taught the youth, ministered to the sick, and did well his part to sustain a high standard of intelligence, of culture, and of ethics within and without the profession.

Your committee, therefore, would resolve, that in these or some similar words The Medical Society of the County of New York record its appreciation of Dr. L. Bolton Bangs—the man, the physician, and the teacher—and that it expresses thereby its sense of the loss it and the profession have sustained by his death.

Your committee would further resolve that this tribute be spread upon the minutes and that the Secretary be instructed to forward a copy to the bereaved family.

Respectfully submitted,

JAMES R. HAYDEN,  
JOSEPH B. BISSELL,  
JAMES PEDERSEN, *Committee.*

## Deaths

CHARLES ROSS JACKSON, M.D., Lake Placid, died January 4, 1915.

JOHN H. JENKIN, M.D., Shrub Oak, died January 28, 1915.

JOSEPH KALISHER, M.D., New York City, died January 27, 1915.

LEVI F. WARNER, M.D., New York City, died January 20, 1915.

\* Also presented before the New York Urological Society, December 2, 1914, and the Genito-Urinary Section, New York Academy of Medicine, December 16, 1914.

# NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

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The Medical Society of the State of New York is not responsible for views or statements, outside of its own authoritative actions, Published in the Journal.

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MARCH, 1915

No. 3

## EDITORIAL DEPARTMENT

### "COMPULSORY VACCINATION."

THERE is but one method of preventing smallpox, and that method is by vaccination. Isolation, sanitary and hygienic precautions no matter how strictly enforced, are inadequate to prevent its dissemination.

Year after year the medical profession of this state has been compelled to resist attempts to destroy the law of compulsory vaccination of children before their admission to the public schools. All children thus being rendered immune to smallpox, the state in course of time becomes immune and epidemics of smallpox cease. Heretofore we have been inclined to look upon the anti-vaccinationists as argumentatively weak, but fanatically strong—accusing them of a mental narrowness on this question, which prevented their recognizing plainly demonstrable facts. It is unwise to ignore the claims of an adversary because we believe him to be obsessed with a false idea, and to say that we are incontrovertibly right in our own. Statistics have played an important part in our disputations. Now statistics we will admit can be juggled to fit almost any contention, but experience, carefully compiled records, and the results of experimental analysis are factors which should be convincing to a mind not too deeply immersed in prejudice. We do not believe that the anti-vaccinationists would oppose the law on the ground of compulsion

being an assault upon personal rights, when performed to prevent a loathsome disease, if that object in their opinion were certain to be obtained. The basic ground of their opposition is that vaccination is productive of more harm than good, in many instances causing death, morbidity, mental suffering and expense.

That tetanus, erysipelas and general infection have had their origin in the vaccination abrasion or sore we cannot nor do we wish to deny. Our own investigations have proven that vaccine virus has in the past in a few instances contained tetanus bacilli—a lamentable occurrence in its preparation, which under the present federal supervision can hardly occur again. *Other infections have been produced through lack of anti-septic precautions subsequent to the vaccination, such as the want of cleanliness and the accidental removal of the scab permitting insect dust, dirty fingers and infected clothing contact.* We have no quarrel with the anti-vaccinationists, we expect to convince them of their error in time. Their antagonism has accomplished good. The manufacture of pure virus will result, carelessness in its preparation in the future will be punished by imprisonment. Doctors will pay more heed to asepsis, parents and children will be educated regarding the seriousness of the results of neglect. Yet withal warnings of danger will be lost on stupid parents and thoughtless children.

The Jones-Tallett bill now before the Legislature having been reported favorably by the Public Health Committee of the Assembly (except that it excluded from its provision cities of the first and second class—New York, Buffalo, Syracuse, Rochester and Albany), is not as radical as bills heretofore presented, is *opposed not only by the medical profession but by the anti-vaccinationists as well.*

It was with considerable astonishment that the medical profession learned that one of the most highly-esteemed members of the State Medical Society, Dr. Hermann M. Biggs, Commissioner of the State Board of Health appeared before the Public Health Committee and advocated its adoption.

This bill, except in specific instances, renders nugatory the existing law of compulsory vaccination. Let us briefly consider the salient features of the present law and the one proposed to take its place.

Section three hundred and ten and three hundred and eleven of chapter forty-nine of the laws of nineteen hundred and nine enacts,

"That no child or person not vaccinated shall be admitted or received into any public school of the State of New York, and the trustees or other officers having the charge, management or control of such schools shall cause this provision to be enforced. It further enacts, that due provision be made for the vaccination of all children desiring to attend school whose parents or guardians are by reason of poverty unable to pay for such vaccination."

This law is mandatory, definite and free from the possibility of ingenuous interpretation. It has been to a great extent effective, particularly so in cities of the first and second class, though it has met with considerable opposition in some up-state cities.

The important features of the amendment proposed, depleted of its more or less unnecessary verbiage, enacts:

"Whenever smallpox exists in any city or school district or in the vicinity thereof, and the State Commission of Health or the local Board of Health shall certify in writing to the school authorities, it shall become the duty of such school authorities to exclude from school every child unable to furnish a certificate from a duly licensed physician that he or she has been successfully vaccinated."

"Whenever school authorities cause this law to be enforced the local board of health shall provide for the vaccination of children whose parents are unable to do so."

"The expense incurred under the direction of the

Board of Health shall be charged upon the municipality over which the Board of Health which directed the vaccination has jurisdiction and shall be paid in the same manner as other expenses incurred by the same body."

"Vaccination *may* be performed by a physician at such periods of the year as may be prescribed by the State Commissioner of Health."

It is inexplicable to many that Dr. Biggs, who by virtue of his position, is supposed by the public to represent the most modern scientific thought in preventive medicine and sanitation, should without consultation with the Committee on Legislation or the Council of the State Society, appear before a Legislative Committee and enunciate opinions at variance with the concrete thought of the profession. The importance of his views is enhanced in public opinion by his official status, a political gift of which he was in every way worthy, yet which would possess the same potentiality for harm or good in a less competent representative.

The question of compulsory vaccination is a most momentous one of far-reaching eventualities. To grasp its importance requires deep and thoughtful study of the subject. The layman's mind as conscientious and unbiased as it may be, cannot absorb in a hearing of a few hours the result of a century's experience; it can be influenced by sophistry, oratory and sympathy.

'Tis a pity, and a pity 'tis, 'tis true, that the medical profession in this country is not held in the veneration that it is abroad, or otherwise our legislative bodies would on purely medical questions be guided by its voice. Mr. Tallett introduced the amendment but we do not know who framed it. We are justified, though, in believing it was designed by Mr. Loyster, a most estimable man (whose son died following vaccination), with the most humanitarian object in view. It was presumably submitted to the Commissioner of the State Board of Health, who, believing it a better bill than the more radical ones to be presented, and recognizing the strong opposition to the compulsory law in the country towns and districts, as a matter of expediency, accepted it, remaining still a firm believer in the absolute efficacy of vaccination as a preventive of smallpox. Dr. Bigg's remarks in support of the bill will be found on page 89 anent the same.

If the Commissioner of Education cannot enforce the law, by all means let its enforcement be placed in the power of some authority which can and will enforce it. Laws are enacted to be obeyed and not ignored by whimsical persons whom they do not please.

Dr. Biggs is not charged with being an *anti-vaccinationist*, but the Medical Society of the State of New York is not in sympathy with the stand taken by him. It believes he yielded his convictions to the clamor of an unjustifiable local prejudice. What stronger argument could be waged against non-compulsory vaccination than his own words.

"I wish to state the facts which have led up to the introduction of this bill. One year ago there were over 200 cases of smallpox in Niagara Falls. The disease had been prevailing there for almost two years. A large percentage of the population were opposed to vaccination, and no effective measures of prevention had been taken. The disease had been transferred to the numerous other localities and finally about fifty separate outbreaks occurred in as many different communities, due to the transmission of the infection from Niagara Falls. A really intolerable condition existed and the State Department of Health determined to stamp out the disease in this state.

"The Niagara Falls authorities, naturally influenced by local sentiment, were not permitted to enforce heartily the recommendations of the Department of Health. We insisted on vaccination of, and a rigid quarantine over, all exposed persons. Over 22,000 persons were finally vaccinated and in a comparatively short period out of a total population of some 30,000. The disease in Niagara Falls and in all of the other localities where it appeared was practically stamped out within a few weeks."

Buffalo, a city in the same vicinage, where the law had been enforced remained free from the contagion.

During the outbreak last year about 300,000 children outside of New York City were vaccinated. In the case of an emergency, is there not an element of danger in the hurried vaccination of great numbers? Can the child's or adult's previous or present condition of health be properly studied in the face of danger?

If, as alleged, the strain of smallpox now existing in the different parts of the state is of a milder strain through attenuation, what rendered this strain so mild? Vaccination. Our omniscience is not such that we are able to say that a virulent strain with a mortality of 25 or 30 may not reappear. It is true we must have Public Health Education, but its effects are minimized unless we have the power

to compel obedience to its admonitions. There are some people so obtuse to instruction on personal cleanliness, that if you were to place a silver basin filled with crystal pure water and a towel of the softest linen before them, they might drink the water, use the towel for a handkerchief but for the purpose of ablution—never. If there remain a large portion of unvaccinated population because the law has not been enforced, we have the danger of an epidemic ever with us. It is a question whether a public officer is justified in having his personal feelings gratified by the support of a small minority of the citizens of the state, rather than its antagonism through the performance of a duty placed upon him by the state. If a public officer seek popularity through neglect of duty, is he an efficient officer?

*It is only when smallpox appears and the school authorities notified by the President of the Board of Health that they are to exclude non-vaccinated children from school.* The Board of Education found it impossible in many up-state school districts to enforce the law. This provision places its enforcement practically in the power of the Board of Health, not an unwise procedure. It is evidently the opinion of the supporters of the bill due to the rarity and mildness of the attacks that detection and isolation of the first case to appear, will be sufficient to prevent its spread. We do not believe the argument is tenable. Many persons could be exposed to the same source of contagion as the first one. Error in diagnosis or delayed diagnosis could expose the whole community to infection.

*Vaccination may be performed at such periods of the year as may be prescribed by the Commissioner of the Board of Health.*

The intent of this is to do away with vaccination during the summer months when children are exposed through negligence of the wound to infection. This provision is harmless and in the face of unusual danger could be left to the discretionary power of the commissioner. The other features of the bill, such as the manner of, by whom and the assessment of the expense, we deem of less importance. In conclusion we do not favor any compromise on the grounds of expediency. The law as it exists is sound, efficient and should be retained.

**"TO BE LOOKED FOR AND ENJOYED."  
THE 109TH MEETING AND BUFFALO.**

**A**S the plans for the 109th meeting of the Medical Society of the State of New York unfold, one is impressed with the sure promise of a program and an exhibition of unexcelled interest and usefulness. A rare treat is in store for those who attend. Buffalo is waiting with open arms to greet the entire membership and their friends with all the hospitality that makes the Queen City of the Lakes the ideal convention city. With shaded asphalt streets, with many metropolitan hotels, and with the mighty Niagara at her feet, Buffalo is a charming city to visit. She can be reached more easily and as cheaply as the mighty city of Gotham.

The building—the Armory of the 65th Infantry, N. G., N. Y.—in which practically every event of the entire three days will be held—magnificent in proportions, unexcelled in appointments—seems almost to have been built especially for the purposes of such a scientific convention. A noble entrance opens upon a palm-garden vista where along wide paths, bordered by beautiful booths, one may find spread in elegant array the latest and best of the material things the physician and surgeon use in the warfare against disease. Along the sides of the great drill room—Exhibition Hall—will be discovered, placed for physical comparison, the ideals of the great medical schools of the country. Federal, state and municipal boards of health will there exhibit the last thing in state medicine, hygiene and sanitation. Many philanthropic and sociologic associations will display the results of their investigations in comprehensive and enlightening yet simple forms. Here one will find such problems as safety first, tuberculosis, alcohol, subnormal child, scientific illumination, conservation of vision, hospital equipment and management, all profusely illustrated so that he who runs may read and read with profit. An especial effort is being made to show forth in the section on education, not only the teaching methods followed by the great universities of this and other states, but also recent methods in clinical, pathological and laboratory diagnosis, such as sero-diagnosis, Roentgenograms, Abderhalden, and other tests.

In passing from section room to section room, one is struck with the ease and the short lapse of time with which one room is reached from any other; this makes it possible with little effort to completely hear desired papers and discussions in each of the six sections during a single half-day session—a consummation never before attained. The section rooms are large, well lighted, and sound proof against external noise, while the acoustics are excellent, so that a low-voiced speaker may be easily heard, all of which add to the pleasure and comfort of the occasion. The seven illustrated popular talks, while partly going on at the same time as the technical papers and discussions, in no wise interfere. For this departure has been enlisted notable men and women,

each an expert in the subject chosen. The result of this presentation must seriously influence the attitude of the public toward, and create a better understanding of the methods and principles of the profession.

In one corner of this vast building will be found a restaurant with a seating capacity of five hundred, wherein one will find a cuisine the equal of any first-class hotel; but in spite of the high quality, the menu is furnished at very moderate prices. In another corner will be discovered the library where silence reigns so that one may write letters or poems or scientific essays undisturbed, or study the latest war news unmolested. One will find spacious wardrobes with courteous attendants to care for wraps, bags and parcels; telephones reaching to every point in the United States by which one may be called to duty or from which to communicate direct with home; willing typewriters, anxious to please, who will correctly put it in cold print just as one wishes to say it; cigar stands serving one's own special brand; news stands bringing ones daily paper at the usual hour; lounging and smoking rooms where one may relax and enjoy the stories and experiences of good-fellowship. In fact, the local committees have tried to provide everything to secure comfort to those attending.

Particularly are arrangements being perfected for the entertainment of the ladies accompanying the members. Receptions and teas at which to meet the notable women guests of the Society and there to see all that is most dear to the heart of womankind are being planned, while trips to Niagara Falls and other nearby places of interest, as well as visits to the shops and theatres, will be offered.

The crowning social event of the meeting will be the annual banquet on Wednesday evening. It promises to be one of the finest occasions among the many the Society has been so fortunate as to give. The menu is unique and contains many rare viands. The after-dinner speakers, both grave and gay, are known nation-wide. The committee is already making table reservations for those who are wise to the probabilities. The number of places is limited and no more than the comfortable seating capacity of the banquet hall will be sold. The orchestral numbers alone are worthy of the evening's entire occupation.

There is no doubt that the 1915 meeting will offer a medico-scientific entertainment rivaling any hitherto given by medical bodies of equal size and geographic distribution. But by reason of the ideal place in which it will be held, the 109th meeting will offer, without in the least detracting from the serious work in hand, an opportunity for social intercourse among the members unequaled by any other like meeting of any size anywhere.

It certainly will repay many times the cost, whether of money or of effort, for each member of the Medical Society of the State of New York to attend the 109th Annual Meeting next April.

ALBERT T. LYTLE, M.D. *Chairman.*



## ARGUMENTS IN FAVOR OF THE JONES-TALLET AMENDMENT TO THE PUBLIC HEALTH LAW, IN RE- LATION TO VACCINATION.\*

By HERMANN M. BIGGS, M.D.,  
NEW YORK CITY.

I AM not appearing strongly for or against the passage of this Bill, as the responsibility for the enforcement of the present law devolves on the Commissioner of Education and not on the Commissioner of Health. I desire, however, to state the situation and the attitude of the State Department of Health.

I should, however, be extremely sorry to see it enacted without, at least, the exemption from its provisions of the cities of the first and second class.

The conditions, so far as the control of smallpox is concerned, are very different in the overcrowded cities with a large foreign population from those existing in rural districts and small country towns.

I have found myself in a somewhat unique position. I have been charged with being an anti-vaccinationist because the Department of Health did not oppose this legislation. I have been previously charged on many occasions with being too progressive, radical, even revolutionary in public health measures, but have never before been charged with being a reactionary. I would greatly regret to have the impression remain that the medical profession in New York State (as represented by the Medical Society of the State of New York) and the State Department of Health were not in sympathy, and particularly that the Department was yielding any important vantage ground in the fight for better health conditions.

Some of those who have appeared in opposition to this Bill have been my close friends and advisers in public health work for the last twenty-five years.

I wish to state the facts which have led up to the introduction of this Bill. One year ago there were over 200 cases of smallpox in Niagara Falls. The disease had been prevailing there for almost two years. A large percentage of the population were opposed to vaccination, and no effective measures of prevention had been taken. The disease had been transferred to numerous other localities and finally about fifty separate outbreaks occurred in as many different communities, due to the transmission of the infection from Niagara Falls. A really intolerable condition existed and the State Department of Health determined to stamp out the disease in this state.

The Niagara Falls authorities, naturally influenced by local sentiment, were not prepared to enforce heartily the recommendations of the De-

partment of Health. We insisted on vaccination of, and a rigid quarantine over, all exposed persons. Over 22,000 persons were finally vaccinated and in a comparatively short period out of a total population of some 30,000. The disease in Niagara Falls and in all of the other localities where it appeared was practically stamped out within a few weeks.

The provisions of the Education Law in regard to vaccination of school children had never been enforced in most of the smaller cities and rural districts of this State. During the outbreak last year many school authorities declined to enforce this provision although smallpox existed in the respective localities. The Department of Health asked the Commissioner of Education to enforce this law and he acquiesced and heartily co-operated with the Department in its efforts to control the spread of the disease. As the result of the pressure which was exerted by the Department of Education and the Department of Health during the summer probably 250,000 to 300,000 children outside of New York City were vaccinated—as many as had been vaccinated in the several previous years. In some localities bitter opposition developed to this measure in the absence of the existence of small pox and it became evident that the complete enforcement of it was impossible.

It should be remembered in this connection that the situation existing now is a very different one from that which existed when this law was passed, and that the strain of smallpox virus now prevailing in different parts of the United States is extremely mild and very rarely fatal. If the disease prevailing were the same that existed ten or fifteen years ago no difficulty would be encountered in the enforcement of the law. If 25 or 30 per cent of unvaccinated persons died of the disease and a large percentage of the others who suffered from it were markedly pitted for life, vaccination would be eagerly sought for in the presence of smallpox. Such, however, is not the fact at the present time. I do not know of any other communicable disease in which such a remarkable transformation has occurred within the last ten or fifteen years as has occurred in smallpox. Many of the communicable diseases are less virulent than formerly and the severity in different years varies greatly. In smallpox, however, a mortality of 25 per cent or more has been converted into a death rate not to exceed 1 per cent. Some have maintained that this is due to the effects of vaccination, and I have no doubt that vaccination has been a material factor in producing the result. Another cause, however, in my opinion is that the virulent strains of smallpox virus have been stamped out and only mild strains have been left to propagate themselves. When a virulent type of smallpox develops it is immediately dealt with so rigorously by isolation and vaccination that opportunities for its extension are strictly limited. Mild forms.

\* Given before the Public Health Committees of the Senate and Assembly, February 10, 1915.

however, are not feared, are widely disseminated, and are now prevailing in many parts of the United States.

The key-note of modern public health work is public health education—not compulsion. Success comes from leading and teaching; not from driving people. The State Department of Health will be able to deal with smallpox in this State under the old law or under the proposed new law. The existence of the present law was not any considerable factor in stamping out smallpox last year. The proposed new law would answer the purpose probably as well.

It has been said that without the compulsory vaccination of school children a very large unvaccinated population would exist which in the presence of infection would offer a fertile field for the extension of smallpox. Such a large unvaccinated population already exists and has existed in New York State for a long time because this law has never been enforced.

In dealing with any public health problem in any community I would rather have the sentiment of the community strongly supporting the health authorities without legislation than compulsory legislation and an antagonistic public sentiment. Sanitary authorities to succeed must have and must be able to retain the confidence of the community.

An attempt at the present time to enforce strictly the present law will in many of the rural communities of the State result in my judgment in much harm to the public health cause without any equivalent return. The health authorities under the present law are not charged with the enforcement of this but it is left to the Department of Education. The proposed legislation places the authority with the Commissioner of Health. There are some less important provisions of this bill which should in any case be amended and which I believe the committees have already decided to amend.

#### ADDRESS IN OPPOSITION TO THE JONES-TALLETT AMENDMENT TO THE PUBLIC HEALTH LAW IN RE- LATION TO VACCINATION.\*

By ABRAHAM JACOBI, M.D.,  
NEW YORK CITY.

**I**F there be any real or apparent partisanship in this discussion, we all wish it understood that we all mean the best of our people. Your Committee and the Legislature will undertake the task to examine into the merits of whatever you have permitted us to lay before you. It will be for you to recommend our old vaccination law, or Bill No. 125, which is at present before the Assembly, or the new bill which has just seen the light. "An Act to amend the public health law, in relation to

vaccination," introduced by Mr. Tallett, leads to no safety. It takes it for granted that the State Commissioner of Health, or the local board of health will know of the existence of smallpox in any school district or city. "Whenever" this *improbable* occurrence takes place, they are to notify the school authorities "in writing." The bill leaves it doubtful what this writing is to be, and how and in what time it is to reach its destination.

Again:

A physician is to certify that a person was vaccinated within a year from the date of the issuance of such certificate. The bill does not say what will happen when the accurate date of vaccination cannot be ascertained.

Again:

Whenever school authorities cause this provision: viz, to exclude children from school without a certificate of vaccination, to be enforced, the Board of Health shall provide for vaccination."

Question:

What will happen whenever school authorities do *not cause* this provision to be enforced? Have the authors of this bill found them, in our hamlets and villages, always anxious to comply with rules and obedience to which is advised against, or directly fought by a hundred thousand ignorant or misinformed and fanatical people of both sexes? I have not. I confess I have met in the bulk of our population with more indifference than farsighted public spirit. It takes the collective thought and activity of a political center like the Legislature to instil a democratic soul into a big political body. My personal advice is that you *preserve your law* enacting compulsory vaccination and be also sure to *enforce it*. That may be the end of smallpox and its dangers.

Again:

"The local boards of health *may*, in their discretion, provide for the payment of additional compensation to health officers performing such vaccination."

Question:

If the medical health officer will refuse to perform additional work without that additional compensation which *may* be granted or refused by what is called the discretion of the local boards of health, what is to become meanwhile of the unvaccinated children and the adults of the village, and the dangers to the village and its neighborhood near and far?

Again, and much worse:

"Vaccination may be performed by a physician at such periods of the year *only* and in such manner as may be prescribed by the State Commissioner of Health."

Question, not one but many:

Why at such periods of the year *only*?

Which are those periods of the year as may be prescribed by the State Commissioner of Health?

When smallpox breaks out without the permis-

\* Given before the Public Health Committees of the Senate and Assembly, February 10, 1915.

sion of the Commissioner and without his knowledge what is he going to do about it?

My attention, however, has been directed to what seems to be a fact that what smallpox we have had in the State for many years, has been quite mild and not very fatal. But smallpox is smallpox and like other scourges will change in its virulence, may be mild this year, and pestilential next.

I have also been told that the proper time for vaccination should not be the summer. Clothing is scanty at that time, exposure of the skin frequent, dust universal, the tetanus bacillus more general and liable to reach a wound—mainly in the country. You see I am quite anxious to plead an adverse opinion also. For what we are after is the public welfare. You are the guardians of the commonwealth, and entitled to the consideration of all sides of the question. Still, when you deal with a sempiternal enemy like smallpox you do not wait until somebody tells you he is on you. You prepare against him at any time.

The wisest of all our State Commissioners, present, past and future, should not be too fervently convinced of their infallibility. We are in America too prone to believe in the infallibility of the incumbents of offices. In Europe where they believe in autocracy they have a proverb which says that to whom God gives an office, to him he also gives sense. There are things, however, in Russia and Prussia which we had better disdain. The author of your bill lays too much stationary power into the hands of changing Commissioners of Health. It may be difficult to deny the knowledge and force of the present Commissioner—I do not, for I have studied and admired him since he began to serve the community. Still, there ought to be after all more wisdom in the collective professional mind, and more authority in the people and its legislators than in one man. Your bill which is a State bill and not a local one, delivers too much—even the last bit of an official report demanded in your bill—into the hands of the State Commissioner. I feel fairly safe in the Albany office, but only fairly so, and temporarily only. Some large cities of the State, in questions of health and sanitation and safety, believe in a proper dose of home rule to which they are entitled.

There are many reasons why you should not be tempted by doctors or laymen to abolish your present law. We are all human and may be swayed by sympathy and sentiment. But you are here to consult experience and facts, both ours and those of other countries. We are told that infantile paralysis, meningitis and tetanus have been caused by and have followed vaccination, and that for that reason general and compulsory vaccination of school children must be abolished. Your laws has been enacted to secure yourself against the smallpox of the children of the public schools. You have been derelict in the performance of your duties unless you turn your

preventive attention to the children of the private, parochial and Hebrew schools.

You have been presented with the history of a case of poliomyelitis, so-called infantile paralysis, which is attributed by a person non-medical to the poisoning influence of vaccination. It is pitiable enough and rouses all our sympathy. But the conclusion drawn from it, is based on a mistake. There is no connection between it and vaccination. Like other stray or numerous cases, it was caused by the reigning epidemic. No case of infantile paralysis complicated with vaccination is known. It does not exist. Its incubation, which is the time between the infection and the outbreak of the first symptom, lasts from three to seven days. When there are, however, but few cases in a season, its duration cannot always be correctly stated. Now you know that dread disease is ubiquitous and has been so all these years. It may be sporadic like other infectious diseases. During many years in succession, even decades, only a few or no cases will occur, just as in diphtheria, or scarlatina, or mumps which after horrible and destructive epidemics, may seem to have disappeared like a tempest, but their character like that of infantile paralysis is contagious. The latter may strike twice or three times, as I and others have observed, the same family. In 1840 Jacob Heine told of a few stray cases in Southern Germany, similar occurrences, in intervals few and far between, I have published 1862. Colmer (*Am. Journ. Med. Sc.*, 1843) reported the case of a baby of one year that he observed, 1841, in the parish of West Feliciana, La. The parents knew of eight or ten cases that had occurred within a few miles during several months. On the other hand, Caverly, in Rutland, Vt., reported as occurring in one epidemic in his small town 144 cases. And New York City? After not having seen more than a few stray cases for years, she had in two years thousands of corpses and cripples. All of which, fragmentary though it be, is submitted for your consideration to prove that infantile paralysis must not be connected with vaccination. Its microbic cause, only just discovered, is not met in the vaccine virus, and cannot enter into the vaccination wound, if any there be, from the source of poliomyelitis. The source of infantile paralysis is the nasal mucous membrane of the infected person. The same is valid of cerebrospinal meningitis, so-called spotted fever, with its incubation of rarely more than three or four days. Its exclusive origin is in the mucous membrane of the nose.

Then there is tetanus. It is caused in the wounded human body by dry garden soil, dry manure, by dust in a room, or in the seams of a floor: also in gelatine as used on postage stamps or envelopes. The occasional mishaps after vaccination—erysipelas, ulcers, boils, syphilis or tuberculosis—have their own specific microbes and their own preventives. The bacillus of tetanus may reach a wound by its presence in the virus,

or by uncleanness on the part of the doctor, or the attendant, or the child. Wherever an infection and a death have taken place, the cause should have been studied by the State or local health board, or by a district attorney or a coroner.

A brief quotation from Osler's text book is as follows:

"McFarland collected ninety-five cases of tetanus, practically all American. Sixteen of these occurred in 1901, a majority of which could be traced to *one* source of supply, in which R. W. Wilson demonstrated the tetanus bacillus. Most of the cases occurred about Philadelphia. Since that date very few cases have been reported. The occurrence of this terrible complication emphasizes the necessity of the most scrupulous care in the preparation of the animal virus, as the tetanus bacillus is almost constantly present in the intestines of cattle." This most scrupulous care has since been given by the Federal Government with absolute success.

And again from Rosenau's great book on Hygiene (1913), that says:

"It is now exceedingly rare for a death to be recorded as directly due to vaccination. For example, in the Philippine Island in the past few years (1913) the United States authorities vaccinated 3,515,000 persons without a single death or any serious post-vaccination complication."

May I venture to say that what the Federal Government can perform, is not, must not be beyond the possibility of the State of New York. I see only one amendment required by the existing law which is this, that it should apply to every school, parochial and private, beside the public school. Then its benefit will extend to the young population at large, and smallpox will be excluded effectually.

Germany has had compulsory vaccination since 1875. Since that time, in the following thirty years (up to 1904) its mortality was 1.1 to one million inhabitants; the French cities had a mortality of 90.2, London, 160; Belgium, 99.9; Austria, 99.1; Russia, 4,632.2. During that time the annual German loss from smallpox was 37, altogether: almost all, however, near the frontier, mostly the Eastern.

That low figure was due to the introduction of compulsory vaccination. During the last fifteen years the German Army, vaccinated and revaccinated, had no death.

Even as early as 1871, during the Franco-Prussian war the Germans lost only 278 men, the French 23,100 from smallpox. We may still learn from some foreigners, and we owe it to our people to utilize their example.

Finally let us utilize what we are taught by some of our countrymen.

A single quotation from the official report of the Camden, N. J., Board of Health, November 29, 1901, is this: "It is the unanimous opinion of the Board as well as their Committee of Experts, that, inasmuch as vaccination is harmless it

should be insisted upon by physicians as an absolutely necessary procedure for the prevention of smallpox.

"There has been a long period of dry weather with high wind, so that tetanus germs have been constantly distributed in the atmosphere. In all the cases the wound had been exposed by the scab having been knocked off or removed. Frequently children scratched the vaccinated area with their dirty fingers and nails and infected the wound." All that may be avoided. "Tetanus, or any other infection, can never occur if the vaccination is properly protected from contact with the atmosphere or with soiled clothing, bandages, etc. On November 27, 1901, the Philadelphia Board of Health reported 700,000 vaccinations in Philadelphia without a single case of tetanus."

This must be all for today. It is for you to decide and to recommend your conclusions to the Legislature. I speak *my* mind and express the opinion of the vast majority of the physicians of the State of New York, who being taught by their experience and reasoning and instructed by the example of Europe, will teach and continue to work for the gospel of compulsory vaccination.

#### ADDRESS IN OPPOSITION TO THE JONES-TALLET AMENDMENT TO THE PUBLIC HEALTH LAW IN RE- LATION TO VACCINATION.\*

By JAY F. SCHAMBERG, M.D.,  
PHILADELPHIA, PA.

**S** MALLPOX in the prevaccination era was a dreaded scourge. In the city of London, from the year 1700 to 1800 there were, on an average annually, 2,000 deaths per million of the population. If this mortality were applied to the city of New York today, it would mean 50,000 cases of smallpox a year, with 10,000 deaths. In 1752, an epidemic of smallpox developed in Boston, Massachusetts, which at that time had a population of 15,684; of this number, 5,998 had previously had smallpox. During the epidemic 5,545 contracted the disease and 2,124 took it by inoculation. To avoid the danger of infection 1,843 persons fled from the town; there were therefore left in the town but 174 persons that had never had smallpox. The population at the end of the epidemic practically consisted of persons who had survived an attack of this great scourge. Statistics might be cited ad infinitum to demonstrate the widespread prevalence of and mortality from smallpox before the introduction of vaccination. We need not, however, go back so far in history to see the ravages of this pestilence. At the present time, in countries where vaccination is seriously neglected, smallpox still exacts a fearful toll. In the Russian Empire, 40,000 persons die annually from smallpox in but one-half of the population. In Italy from

\* Given before the Public Health Committees of the Senate and Assembly, February 10, 1915.

1887 to 1889 47,000 persons succumbed to this disease, chiefly in the provinces of Sicily, Calabria and Sardinia. In some of the smaller mountain villages, one-half of the people took smallpox; in one village, Guardavalle, 2,300 cases developed in a population of 3,500. After this epidemic, Italy in 1892 passed a compulsory vaccination and revaccination law.

From 1899 to 1911, Minnesota had 41,778 cases of smallpox. These were of the mild type that has been prevalent in this country since 1896.

The City of Cleveland had in 1902, 1,240 cases of smallpox and 224 deaths. An effort was made to stamp out the disease by sanitary methods, including widespread disinfection, but without the employment of vaccination. This effort totally failed; the slaughter from smallpox was so great that the physicians held a mass meeting and demanded that vaccination be carried out; 200,000 people submitted to vaccination; within three months and the epidemic promptly ceased.

In the United States, between 1897 and 1911, there occurred 353,029 cases of smallpox with 8,058 deaths. The vast majority of these cases were of the mild type. At the beginning of the present century, however, a very severe type of smallpox was introduced into the country; from 1900 to 1903 inclusive, there occurred in the United States 163,258 cases of smallpox with 5,171 deaths. During the same period, Germany under a compulsory vaccination and revaccination law, had but 137 deaths from smallpox, including deaths of foreigners residing in that country.

According to a statement made by the Commissioner of Health of Pennsylvania, Samuel G. Dixon, there occurred from December, 1898, to the end of the year 1904, in the State of Pennsylvania, 21,727 cases of smallpox with 1,613 deaths. From November 1, 1903, to November 1, 1904, there were reported 5,172 cases with 521 deaths.

In the City of Philadelphia, from 1901 to 1904, there were 5,014 cases of smallpox with 890 deaths. During the ten years from 1901 to 1910, Philadelphia had almost three times as many smallpox deaths as the entire German Empire.

It was my unfortunate experience to see and treat in the neighborhood of 4,000 cases of smallpox that developed in Philadelphia in the epidemic of 1901 to 1904. I have no hesitancy in saying that all of these deaths were absolutely preventable and that this mortality sorely reflected upon the intelligence of the community.

#### EFFICACY OF VACCINATION.

The present law upon your statute books is predicated upon belief in the efficacy of vaccination as a safeguard against smallpox. The value of vaccination is based upon over 100 years of experience and upon the practi-

cally universal testimony of medical men, particularly of those who have been at the head of smallpox hospitals; the proof of the efficacy of vaccination is further demonstrated by massive statistics which unfortunately time will not permit me to discuss. It is further proven by conclusive experiments upon monkeys. It is impossible to inoculate a monkey with smallpox after it has been vaccinated, although it is easy to do so before this prophylactic measure has been employed. This is direct confirmation of the experiments which Edward Jenner, the discoverer of vaccination carried out, more than a century ago.

The laboratory proof of the value of vaccination can be demonstrated almost with the certainty of a chemical test.

Vaccination is endorsed by the concordant testimony of municipal, state and federal health officers. It is likewise endorsed by practically all civilized nations for this procedure has been made compulsory in their armies and navies, and obligatory in one form or another for their civil populations.

The efficacy of vaccination has been endorsed by every governmental commission that has been appointed to investigate it; it was approved in the report of the committee of the English House of Commons in 1802; in the report of the Danish Royal Commission in 1804; in the report of the Royal College of Physicians made at His Majesty's command to the House of Commons in 1807; in the report of the German Vaccination Commission in 1886; in the Royal Commission on Vaccination appointed by Queen Victoria in 1889; in the report of the Pennsylvania State Vaccination Commission in 1912, and in the report of the Swedish Royal Commission which has only recently finished its sessions.

#### VACCINAL ACCIDENTS AND INJURIES.

Every human act is accompanied by some measure of risk. If one steps into an elevator, rides in a street car, takes a trip in an automobile, traverses the sea, amuses oneself in a theatre or indulges in pleasurable sports, he takes a definite risk which may be mathematically calculated. While in the aggregate the number of instances of death from each of these causes may be considerable, yet the individual danger is so small, that it may be, and as a matter of fact is disregarded. So it is with vaccination; among the millions of vaccinations performed, the number of serious accidents or deaths constitute but a minute fractional percentage. Many physicians of experience have never seen throughout a long professional career a serious accident or death following vaccination. Physicians and their families constitute the best vaccinated class in the community. They are in the best position to know the accident

and complications that occur after vaccination; with this knowledge in their possession they regard vaccination as so safe a procedure that they practice it upon themselves and the members of their family. That serious illness and death has followed vaccination there can be no doubt but it is my opinion that in the vast majority of these cases the complications and deaths could have been prevented, and indeed should have been prevented by greater care in the treatment of the vaccinal wound. Vaccination is unfortunately regarded as so trivial a procedure that insufficient attention is paid to the after treatment not only by the people at large, but too frequently by physicians. That vaccination can be made a perfectly safe procedure is evidenced in the 1907 report of Dr. Victor G. Heiser, Sanitary Director of the Philippine Islands. In this report we read the following: "The fact that there has been no loss of life nor the loss of limb and that there has been no serious case of infection resulting from the vaccination of more than two million human beings is sufficient proof as to the care with which vaccine has been prepared by the Bureau of Science and used by the Bureau of Health." The federal law of the United States of 1902, requires that all establishments engaged in the production or sale of vaccine virus in the District of Columbia or in interstate traffic, shall be licensed by the Treasury Department, after an inspection of the establishment itself and examination of the product manufactured therein. Vaccination virus is purchased from time to time in the open market and examined by the Hygienic Laboratory of the United States Public Health Service.

From consideration of the testimony given before the Pennsylvania State Vaccination Commission, I am convinced that the vast majority of accidents following vaccination at the present time, are not the result of impure virus, but are due to neglect and maltreatment of the wound after vaccination. With regard to post vaccinal tetanus, for instance, it has been shown by Dr. John F. Anderson, Director of the Hygienic Laboratory of the United States Public Health Service, that it is practically impossible to produce tetanus in susceptible animals even by the simple act of vaccination even when tetanus germs are purposely introduced into the virus. The incubation period of post vaccinal tetanus and many other circumstances speak strongly in favor of the view that tetanus germs gain entrance to the wound at a subsequent period. It should be the aim of the state and of physicians generally, to reduce such accidents to the vanishing point by education of the people concerning the care of the vaccinal wound. The benefits that accrue from vaccination are so great that they affect the relatively rare complications and deaths that follow vaccination. Most of the countries abroad have dur-

ing the past 10 or 20 years increased the rigour of their vaccination requirements. Germany enacted in 1875 a compulsory vaccination and revaccination law. Since that time epidemics of smallpox have been exterminated in that country. Japan in 1885 adopted a compulsory vaccination and revaccination law. Hungary in 1887 passed a law requiring vaccination at infancy and revaccination at the age of 12. Italy in 1892 adopted a law requiring vaccination in infancy and revaccination at the age of 10 to 11. Roumania, in 1895, began to put into effect a compulsory vaccination and revaccination law. In 1902 France passed a law requiring thrice compulsory vaccination at the ages of 1, 11 and 21. Only in England has the vaccination law been to an extent relaxed. The present law requires that every child shall be vaccinated before reaching the age of 6 months; the penalty of this law may, however, be avoided by declaration before a Commissioner of Oaths or Justice of the Peace, of conscientious objection to vaccination.

I cannot believe that the great commonwealth of New York will lose the leadership in legislative matters that it now holds by such retrogressive sanitary legislation as is contemplated in the bill under discussion.

Let us discuss for a moment the reasons for statutory provision for vaccination. The legal school age offers the first practicable opportunity of establishing an official supervision over the vaccinal condition of the people and of applying generally the benefits of vaccination. Through the operation of our present law, a considerable measure of security against widespread and fatal epidemics of smallpox can be given to the people, for the law if enforced secures, at least, a one time vaccination of the vast majority of the people. History proves that in the absence of smallpox people generally cannot be depended upon to avail themselves of the protective influence of vaccination. As a result a large unvaccinated population grows up. Upon the introduction of the first spark of infection a general conflagration results. This is the history of all great smallpox epidemics. The people are lulled into security by a period of freedom from smallpox and as a result they have no fear of the disease; consequently vaccination is neglected and when the disease falls upon the community it finds an abundance of susceptible material. It is the height of illogicality to wait until smallpox is upon us before we avail ourselves of the benefits of vaccination. Smallpox of the classic type, which may be introduced into this country from abroad at any moment, may gain such a footing that it can only be stamped out after it has ravaged the population. During periods of smallpox epidemics wholesale vaccinations are obliged to be carried out; the people are panic stricken and rush in great numbers to secure the benefits of the measure to which

they had before been indifferent. An unusual heavy demand is made upon vaccine virus and it is quite possible that the supply of properly tested virus may become exhausted. This occurred a few years ago in Christiana, Norway, and hasty requests were made upon several adjacent countries to supply this city with vaccine virus. Vaccine famines are not unknown in the history of this country. During the carrying out of wholesale vaccinations all of the attendant circumstances tend on the one hand to increase the risk of vaccination and on the other hand to lessen the benefits that accrue from a carefully carried out vaccination of the population during the absence of smallpox. Furthermore, another factor must not be disregarded in considering the present bill; the existence of a law upon the statute books requiring vaccination has a distinct educational influence. The official endorsement of vaccination by the state is unquestionably accepted by the masses as evidence that it is a desirable health protective measure, *per contra* the expunging from the statute books of the provision requiring vaccination by the masses as a repudiation of vaccination; such an act would unquestionably decrease the number of voluntary vaccinations as an official reflection would be cast upon the efficacy of the procedure. As a result of neglect of vaccination a large unvaccinated population would grow up in the rural districts, these persons will in the natural course of events gravitate to the large cities and serve to create a large unvaccinated element in the urban population. To my mind the proper procedure is to maintain the integrity of the present law; if there is opposition to the law on the grounds of fear of untoward effects, then let the state make every effort by education and other methods to further reduce the relatively uncommon accidents of vaccination. As far as the community is concerned the danger of vaccination is infinitesimal compared with the peril of unvaccination.

I have a sympathetic regard for the opponents of vaccination; there can be no doubt about the sincerity and zeal of the anti-vaccinationists. They are working for what they regard to be the best interests of the community, but after long contact with them, I am obliged to say that in my opinion they are misguided. The opponents of vaccination are constituted largely of laymen who are not qualified by technical training or scientific education to properly weigh and pass judgment upon the technical questions involved. I am sure that the legislature of New York will be guided, as has the United States Government been guided, by the counsel of its medical scientists and sanitary experts. In its campaign for vaccination the medical profession maintains a high altruistic attitude; its sole object is the good of the people.

## PRACTICAL CONSIDERATIONS OF BLOOD CULTURES.

By WILLIAM LINTZ, M.D.,

WHILE it is perfectly true that the usefulness of blood culture is limited to infectious diseases and their complications, it is equally true that it is just these types of cases that form the major part of the work of the general practitioner, pediatrician and surgeon, and not infrequently of the obstetrician. They are only too often cases that are extremely difficult and occasionally impossible to diagnose by any other means. It is therefore a subject which is not only of interest to the bacteriologist and to the laboratory worker, but is of vital importance and of direct interest to physicians engaged in all branches of medical work. Positive blood cultures absolutely clinch the diagnosis as but very few other single procedures do. Negative blood cultures are not so conclusive, although even they have significant values from a negative point of view, as we shall see later.

In many of the infectious diseases the study of the bacteriology of the blood has not only given us a method of establishing the earliest possible diagnosis, but it has revolutionized their pathogenesis; and it has scientifically explained their relapses. In not a few instances by the aid of the blood culture we are able to prognosticate with almost mathematical accuracy.

### HOW DO BACTERIA REACH THE CIRCULATION?

They reach the blood in one of three ways.

(1) There is an *active ingrowth* of bacteria through the blood vessel wall and into the lumen. An example of this is when a tuberculous lymph node ruptures into the lumen of a blood vessel and the tubercle bacilli are disseminated throughout the circulation, producing a general miliary tuberculosis. This method of the pathogenesis of a septicemia is comparatively infrequent. The *passive methods* are the usual ones; namely (2) septicemia produced by *bacterial absorption* and that produced by (3) *mechanical pressure* of bacteria into the lymph spaces. When from an infected focus, of recent or old origin and established somewhere in the body, bacteria are absorbed by means of the lymph stream or capillaries and ultimately reach the general circulation, they may here produce a transient bacteremia or a fatal septicemia. Furthermore, bacteria may reach the circulation as a result of an operation upon a infected focus or as a result of an external injury. In either case the bacteria are mechanically pressed into the capillaries or lymph spaces and set up a septicemia or a transient bacteremia.

The most important local cause is the retention of the decomposing fluids in the wound leading to an amount of pressure which helps the entrance of the organisms into the blood or lymph stream.

Bacteria may grow in the course of the circulation and thus be mechanically swept into it. As when bacteria, growing and multiplying in the lymph nodes, are swept into the general circulation during the course of typhoid fever, or when streptococci are mechanically swept off by the blood stream from an infected heart valve, the endocarditis having been caused perhaps some time ago by a streptococcus sore throat. Finally bacteria may be brought into the blood stream by means of leucocytes.

#### PROGNOSIS OF POSITIVE BLOOD CULTURES.

In the light of advancing knowledge and improved technique our conception of the prognosis of positive blood cultures must be materially modified. Whereas but a short time ago the demonstration of bacteria in the blood was equivalent to a death certificate, we now know that there is hardly an infection, no matter how slight and localized, but what at some time during its course bacteria were demonstrable in the general circulation.

Schottmüller was among the first to conclusively demonstrate in the blood anaerobic streptococci, in women suffering from putrid abortions, and who clinically ran a very mild course.

That in reality there are more bacteria present in the blood than we are able to demonstrate is evidenced by the fact that as we improve our methods our results also improve. As for instance the number of positive blood cultures has greatly increased in typhoid fever since bile has been added to our media, in putrid abortions by the employment of anaerobic methods, and in tuberculosis by the experience of Rosenberg, Liebermeister and Schnitter.

No uniform prognosis can be given in positive blood cultures which would cover every case. Not only does much depend in general upon the virulence of the bacteria and the resistance of the patient, but also upon the disease the patient is suffering from, whether the primary focus of infection is removed, the number of bacteria in the blood, during what stage of the disease they are found, and numerous other factors. Some diseases are always associated with bacteria in the blood and the prognosis is that of the disease itself, irrespective of the positive blood culture. Such diseases are typhoid fever, pneumonia, etc. It will therefore be most advisable to consider the prognosis in each disease more fully under its separate micro-organism.

We can obtain a clear conception as to what occurs in septicemia by means of animal ex-

perimentation, and then perhaps apply the results to human pathology. Bull and numerous other workers have conclusively proven (Method for estimating bacteria in circulating blood in rabbits. *C. G. Bull. Jour., Experimental Med.*, Sept. XX, No. 3, 1914.) that when rabbits are injected intravenously with a quantity of virulent streptococci or pneumococci sufficient to cause death within two to four days the septicemia takes a definite course with slight variations. The bacteria rapidly decrease in number from the time of the injection to from two to four hours, at which time the blood is sterile or contains only a few bacteria. Within five to six hours the bacteria reappear in the blood and steadily increase until the death of the animal. If the bacteria are less virulent, the same quantity of culture causes a chronic type of infection. The same initial decrease in the number of bacteria occurs. The re-entrance into the blood is somewhat delayed, the septicemia does not reach the height obtained in the acute cases, and a second fall occurs within the course of a few hours. These rabbits show a low blood-invasion or a sterile blood culture for several days. During this time they become emaciated to a marked degree. Then the low septicemia rapidly rises or the rabbit with a sterile culture develops a severe septicemia within a few hours and death takes place from a few hours to two days thereafter. In this type of infection local lesions, pericarditis, pleurisy, peritonitis, etc., are usually found. In the infections which run an acute course no gross lesions are found.

If the bacteria are still less virulent they never re-enter the blood after the initial disappearance, and the rabbits remain in good condition. Variations in the natural resistance of individual animals may be sufficient to cause quite marked irregularities in the course of the infection. Pneumococci can be standardized so as to produce a particular type of infection more easily than streptococci. In general infections such as those produced by streptococci and pneumococci the number of the bacteria present in the circulating blood at a given time supplies accurate and delicate information regarding the severity of the disease.

A large number of bacteria found in the blood and tissues at autopsy do not necessarily prove the existence of a heavy infection before the onset of the death agony, since it is a well-known fact that bacteria multiply with enormous rapidity, once the natural resistance of the animal has been overcome. Again, the individual animals of the same species, age and apparently of identical physical condition react to the aggressive force of the infecting organisms variously. This fact is readily found out by the injection of a series



of rabbits with lethal quantities of bacteria per body-weight, and by making tests at various periods before death results, which, in the case of streptococci, ranges from one to six days.

Furthermore, from the animal experimentation of Schimmelbuschs & Ricker (Fort-schritte der Medizin, 1895, Bd. 13), Noetzel's (Arch. f. klin. Chir. LX, 1899, and LXXX und Fortschritte der Medizin 1898 Bd. 16; Beit-raege zur klinischen Chirurgie LIV, S. 458), Peiser (Beitraege zur klinischen Chirurgie XLV und LI.), and others, we can fairly well differentiate those cases with positive blood cultures which are prognostically favorable from those which are almost uniformly fatal.

Experiments on animals have conclusively demonstrated that in practically every infection resulting from wounds, peritonitis, etc., bacteria are absorbed into the circulating blood stream. This absorption of bacteria into the circulation may be termed the *primary absorption* and takes place rapidly and immediately from 10 minutes to one hour after the establishment of the infection. Experimentally this is followed later on by a secondary or chronic absorption of bacteria into the circulation. While it is easy to demonstrate bacteria in large numbers in the blood during the primary stage, it is difficult to obtain bacteria during the secondary or chronic stage; and when occasionally successful the bacteria are in small and diminishing numbers, as they are continuously being destroyed by the bactericidal power of the blood. Not only are highly pathogenic bacteria absorbed, but even those which are less so, and hence may produce a transient bacteremia.

Exactly the same results are obtained in the human being. As a rule, by the time the patient comes under our observation, the primary stage of bacterial absorption has passed; and, even if we should happen to culture the blood during the primary stage, positive findings in the human being would be a mere accident. For the initial number of bacteria causing the average infections in man is but very small.

As we generally culture the blood only during the "chronic or secondary stage of absorption," therefore our results are quite frequently negative in cases where bacteria has not only been present previous to the time of culture but even during the time of culture; for as a rule the body is quite capable of destroying and eliminating bacteria when present in a moderate number. It is only when the resistance of the body falls or the virulence of the bacteria rises; *i. e.*, by increasing in pathogenicity that it becomes possible for bacteria to multiply in the blood. When this occurs, then in spite of our comparatively crude methods, bacteria become demonstrable

in the circulation. In the primary or acute stage of bacterial absorption, then, we have a simple bacteremia, which is readily demonstrable; in the chronic stage on the other hand bacteria can be demonstrated in the circulation only when the bacteremia changes into a septicemia.

To realize this fact is exceedingly important; for only then can we differentiate between the acute and primary stage of bacterial absorption—which as a rule establishes only a transient and harmless bacteremia—from the chronic and secondary stage of bacterial absorption, which when demonstrated usually means a grave septicemia of decidedly bad prognostic omen.

One can readily demonstrate numerous bacteria in the blood immediately after an operation upon an infected focus, in cases where the blood is sterile prior to the operation. These patients, as a rule, recover, although the bacteria may be in large numbers and not infrequently of high virulence. I have repeatedly obtained hemolytic streptococci from the blood of patients immediately after a curettage for septic abortion, and the staphylococcus pyogenes aureus immediately after an operation for necrosed bone. And yet, these patients get well without any difficulty. An explanation for this can be readily found. The bacteria reach the circulation in large numbers, as a result of being merely mechanically pressed from the infected focus into the lymph spaces and capillaries during the operation. They are there only during the primary absorption stage, and the blood by means of its bactericidal power, soon rids itself of all the bacteria, and the blood becomes once more sterile. The outlook and the course of the disease are quite different should you find bacteria in the above mentioned cases several hours or days after the operation. This no longer indicates a mere bacteremia resulting from the primary absorption of the infected focus, but a serious septicemia, the bacteria having gained the upper hand. In other words, while a post operative primary bacteremia is of no particular significance in a patient with good resistance, in a debilitated patient with poor resistance this harmless bacteremia may turn any moment into a grave septicemia. Such cases are not by any means infrequent, and everything should be resorted to, if possible, to avoid a primary bacteremia. Peiser (Beitraege zur klin. Chir. Bd. LI, 3, 686) has conclusively demonstrated that in fatal cases of septicemia resulting from peritonitis the same explanation holds good. That as from every other infected focus, the bacteria are absorbed into the circulation from the infected peritoneum during the primary absorption stage, the resistance of the patient, however, is so low that he is unable to check

the growth and multiplication of the bacteria in the blood, which leads to a fatal sepsis.

An entirely different interpretation must be placed when bacteria are isolated in the blood stream, and which arise from an infected focus located in the course of the circulation. Here we may repeatedly isolate the bacteria from the blood for weeks and even months without necessarily interpreting it as an index that the virulence of the bacteria is greater and therefore has overcome the resistance of the patient. We can best illustrate this point by considering the subjects of endocarditis and thrombophlebitis.

Infectious endocarditis characterized by marked general signs and symptoms of sepsis and due to the various pathogenic bacteria, in such cases when bacteria are isolated from the blood stream, the interpretation of the septicemia is that of any other infection; the bacteria are virulent and have overcome the resistance of the body. The prognosis is unusually bad on account of the anatomical location of the lesion (see Sachs-Zeitschr. fuer Geb. und Gyn. LXV, S. 161). On the other hand there are a large number of cases of endocarditis which run a very chronic course, and which are caused by the streptococcus viridans of Schottmüller, which as a rule can be readily demonstrated repeatedly in the blood, and yet the micro-organism has but very slight pathogenic properties for man (Lenharz—Die septischen Erkrankungen).

To explain this phenomenon we must consider the pathogenesis of endocarditis lenta and certain mechanical conditions.

According to Lenharz, septic endocarditis occurs in one-third of cases suffering from a previously damaged endocardium. All that is necessary here is that during the course of a septic sore throat, infected endometrium or some cryptogenic infection, etc., bacteria are at one time absorbed in the circulation. They locate themselves upon the heart valves for they find conditions for growth and multiplication more favorable than in the circulating blood stream. From the diseased endocardium they are merely mechanically swept off into the circulating blood stream by the blood current. It is evident that they need not multiply in the circulating blood in order to be demonstrable. In the interval, before the bacteria are destroyed by the bactericidal substance in the blood, they can as a rule be readily demonstrated bacteriologically. In endocarditis even the repeated demonstration of bacteria in the circulation for a considerable period of time is no sign that you are dealing with a highly virulent microorganism which has overcome the resistance of the body; while in other conditions it usually is. The question which logically arises is, why does not the body completely rid itself of this

microorganism, since the defensive forces of the body are greater than the virulence of the bacteria. The explanation lies in the local anatomical conditions of the valves. On account of the lack or poor blood supply of the valves the bacteria are but little affected by the bactericidal substance in the blood and can here multiply undisturbed and produce a bacteremia by being mechanically swept off into the circulation. When the bacteria are once in the circulation, depending upon the degree of the resistance of the body, they are sooner or later destroyed by the bactericidal substances of the blood, which give rise to chills and fever. So long as the valvular tissues are once infected you may get a bacteremia following; the bacteria, however, do not multiply in the blood but on the other hand, are readily destroyed. But should the bacteria actually begin to multiply in the circulation, then indeed you have a good index that the virulence of the germ is overcoming the resistance of the patient. This transition point from a bacteremia to a beginning septicemia is difficult to establish, although a pronounced septicemia is quite readily interpreted as such. When on repeated blood cultures the number of colonies per cubic centimeter of blood is perhaps slowly but progressively increasing and at the same time the subjective and objective findings of the patient become aggravated, then one is justified in assuming that the bacteremia has changed to a septicemia. On account of the prolonged toxemia as well as the anatomical location of the lesion this may happen in endocarditis lenta, although the usual termination is that of exhaustion.

What has been said of endocarditis holds good to any other lesion which has a similar anatomical location and a similar histologic structure.

Quite an analogous condition is found in infectious thrombophlebitis. The broken thrombi become loose in the circulatory stream and disseminate bacteria in the blood. The bactericidal power of the blood, however, usually destroys them so rapidly and completely that it is difficult to demonstrate the bacteria by means of the blood culture. It is only when the bacteria multiply in the blood that, as a rule, the blood cultures become positive. This is in accordance with the view of acute or primary and chronic absorption of bacteria as previously set forth. In contradistinction, however, to endocarditis lenta, bacteria which are capable of suppurating and loosening thrombi are as a rule very virulent. The loosening of infected thrombi and their mechanical dissemination of bacteria in the circulation harmonizes and well explains the clinical findings of positive blood cultures alternating with negative ones; for

the bacteria keep on suddenly appearing and disappearing from the blood stream. Highly virulent bacteria emanating from an infected thrombus which have so lowered the resistance of the body as to establish a blood infection and multiply there, usually lead very rapidly to a fatal termination.

Should the primary focus have healed, either spontaneously or as a result of treatment, without establishing an endocarditis, thrombophlebitis, or other metastatic infections, it is evident that a positive blood culture means that the bacteria have multiplied in the blood. The prognosis is bad. It makes very little difference prognostically whether the bacteria multiply in the large vessels or only in the capillaries; or, as some maintain, in the endothelium of certain organs.

As a result of the above considerations, one must bear in mind that in certain cases the demonstration of bacteria in the blood depends purely upon mechanical conditions. From a prognostic point of view, one must carefully differentiate under what conditions bacteria are demonstrated in the blood. The body as a rule in most instances readily destroys the bacteria which have purely mechanically been swept into the circulation or have reached the blood stream during the primary stage of absorption. In these cases the demonstration of bacteria in the circulation is no index of their pathogenicity. The outlook is quite different if bacteria are demonstrated in the circulation during the chronic stage of absorption. To demonstrate bacteria during this stage there must be an actual multiplication of bacteria in the circulating blood stream, which means that the virulence of the micro-organism is greater than the resistance of the patient. The prognosis is almost invariably bad.

#### OBSERVATIONS ON NEGATIVE BLOOD CULTURES.

Not infrequently the bacteriologist is placed in an apparently embarrassing position when he reports a sterile blood culture in a patient with severe symptoms of infection—such as high temperature and pulse rate, chills, fever and sweats, and when a clinical diagnosis of septicemia by the pathogenic microorganisms has been made. When the patient has metastases in the various parts of the body, and in spite of it the blood culture report should be sterile, then the position of the bacteriologist becomes even more embarrassing. For he is asked, how is it possible to have so many abscesses produced in the various parts of the body, except by bacteria which are disseminated by the blood current. If bacteria are present in the blood current, why do you not find them? These and numerous other questions arise. To explain intelligently these apparent discrepancies; to interpret intelli-

gently the pathogenesis of disease, to understand the various immunological reactions which take place in infections; these, to my mind, constitute a genuine and true knowledge of medicine.

Negative blood cultures may be explained by the following conditions:

(1) The disease the patient is suffering from may be not of bacterial origin, but of protozoan origin, and yet the symptoms presented by the patient may be identical with those produced by a septicemia of the pathogenic bacteria. Of course, the usual method employed for the isolation of bacteria from the blood is totally inadequate for the isolation of protozoa. Malaria forms a typical example of this type of infection. Here also you obtain an increase in temperature, chills, fever, sweats, etc. Other examples illustrating this point are trypanosomiasis, kyalazar, coccidiosis, echinococcus, infection, by Vincent's spiroillum and etc.

According to the classification of some authors the spirochaeta of relapsing fever and syphilis would also come under this heading (Calkins' Protozoology).

(2) The disease may be due to an infection by the various worms. This would include (a) the *intestinal worms* as the taenia, both *riocephelalus latus*, *anchylostoma*, *duodenalis*, round worms, flukes, etc.; (b) *liver flukes* such as *clonorchis endemicus* (this fluke is very common in China and Japan, in certain sections of Japan 20 per cent of the population being infected); *opisthorchis felinus* (in certain parts of Siberia the parasite is found in more than 6 per cent of the human autopsies); *echinococcus*, etc.; (c) *lung flukes* such as *pargonimus westermanii* (in certain parts of Japan and Formosa it is estimated that as many as 10 per cent of the inhabitants may harbor this parasite), etc.; (d) *blood flukes* such as *bilharziasis* (*schistosomum hematobium*). *Trichinosis* and infection by the various *filaria* should be particularly borne in mind, both on account of their prevalence, particularly in certain parts of the world, as well as because these diseases may be easily mistaken for septicemia.

(3) The disease may be produced by the pathogenic trichomycetes, particularly *actinomycosis*, or the blastomycetes or hypomycetes. These diseases would yield negative blood cultures.

(4) It may be a disease caused by a parasite, but which as yet has not been isolated. Examples of these types are: scarlet fever, smallpox, chicken-pox, measles, etc.

(5) The disease may be caused by a micro-organism of ultramicroscopic size. The organism of peripneumonia of cattle was cultivated by Nocard and Roux by growing it in a closed collodion sac, which was placed in

the peritoneal cavity of suitable animals. It is so small that its form can not be made out, and growth is recognized only by the clouding of the culture medium, and the increased virulence of the latter for animals. Recently Dr. Flexner has demonstrated that the microorganism of anterior poliomyelites is a filterable virus; *i. e.*, will pass through a Berkfeld filter, is of ultramicroscopic size, and produces cloudiness when cultivated upon artificial media. The microorganisms of rabies and yellow fever are also filterable viruses and belong to this group.

(6) The disease may be produced by one of the common bacteria, which, however, as a rule are not found in the blood current, as for instance diphtheria, tetanus, tuberculosis and dysentery.

(7) The patient may be infected by one of the bacteria commonly found in the circulation, but in spite of the severity of the existing symptoms a toxemia and not a septicemia or even a bacterimia is present. This may occur in any type of infection.

(8) A patient may develop metastases and emboli and yet repeated blood cultures may prove sterile. I have seen repeated emboli in the spleen, liver and kidney in a patient where the autopsy did not show the usual lesions of acute endocarditis, but there were large calcareous and fibrinous vegetations of the mitral and aortic valves. Pieces of calcareous material were found in the metastases. Cultures from the vegetations as well as the metastases were sterile. The emboli need not always be bacterial in nature. And even in *infected* emboli with extensive thrombosis of *bacterial* origin I have repeatedly obtained negative blood cultures. The disseminated bacteria are within the embolus, and it is impossible to draw the embolus into the needle when drawing blood. The few bacteria scattered in the circulation are readily destroyed. Infected emboli may also be carried by the thoracic duct (W. G. Mac Callum. *Amer. Medicine*, 1903, p. 452). Leucocytes and other cells may be the means not only of the production of the septicemia from the outside but also factors in producing metastases. Bacteria may have been present in the blood, but at the time the blood culture is taken they are destroyed. This condition is present if the blood is cultured after the acute or primary absorption stage has passed. With the disappearance of the bacteria from the blood the primary focus need not necessarily disappear. Bacteria may make their reappearance in the blood. In other words, they are present in the circulation only at times. A positive finding would then depend as to when the blood is cultured.

(10) There may be but few bacteria present in the blood. Therefore, the 10 c.c. of

blood withdrawn for culture purposes may not contain any microorganisms.

(11) The disease may be non-infectious in origin. As when the symptoms are due to absorption of retained placenta and membranes, blood clots intoxication by the various chemicals, vegetables and decomposition products of proteids, as intestinal autointoxication, metabolic diseases, such as gout, diabetes, etc.

(12) Negative blood culture is not infrequently due to faulty technique.

In diseases usually associated with a septicemia or a bacterimia repeated negative blood cultures is of decided aid in establishing a diagnosis, by the process of exclusion. For instance if the diagnosis of a certain case rests between enteric fever and Brills disease (typhus fever) (Brill. *N. Y. Med. Journal*, Jan. 15, 1898. A study of seventeen cases of a disease resembling typhoid fever, but without the widal reaction), negative blood cultures decides the diagnosis in favor of Brill's disease, for if it were typhoid fever the blood culture would be positive. The same holds good in pneumonia and other diseases. When at the beginning of a pneumonic process the diagnosis rests between pneumonia, embolus and tuberculosis, negative blood cultures would be strongly in favor of excluding lobar pneumonia. For a pneumonic septicemia is almost invariably present at the beginning of every case of lobar pneumonia. We thus see that negative blood cultures have also a decided diagnostic value from a negative point of view.

In conclusion I would say if blood cultures were taken more frequently, as they should be, I am positive that many a diagnosis would have to be changed and that many a diagnosis would be established, for quite frequently it is impossible to make one without it. Positive blood cultures clinch a diagnosis as but very few other single procedures do.

## THE USE OF THE BRONCHOSCOPE IN DIRECT EXAMINATION OF THE LARYNX, TRACHEA, BRONCHI, AND ESOPHAGUS.

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**T**HE method of direct examination of the upper air passages, has been practiced for many years. That of examination of the larynx, trachea, bronchi and esophagus is of more recent date.

Bozini, in 1807, examined the upper end of the esophagus. Later Kussman, Mikulitz, Gottstein, Kirstein, Einhorn and others devised instruments for the examination and treatment of the esophagus and larynx.

Gustav Killian, of Germany, in 1897, devised a bronchoscope and succeeded in removing a foreign body from the upper bronchus by means of forceps passed through a straight tube inserted into the bronchus, thus demonstrating the feasibility of upper bronchoscopy. Later he improved his bronchoscope and used it in lower bronchoscopy. These were the greatest steps in endoscopy.

In 1904, Chevalier Jackson, of this country, combined the lighting principal of the Einhorn esophagoscope with the tube of Killian's bronchoscope with which he was able to examine the esophagus and stomach. In 1906 he described his gastroscope and reported a series of fourteen cases in which he had obtained results of value from gastroscopy, including twelve cases with lesions, one without, and one case of extraction of a foreign body from the stomach.

Many improvements have been made in the instruments first devised, making their use more practical and satisfactory.

In 1910, after considerable experience in the use of various bronchoscopes, the writer made several changes in the Kahler-Leiter modification of the Killian bronchoscope, discarding several needless parts, simplifying the instrument, improving the lighting, etc., making it one of the most practical bronchoscopes now in use.

The brilliant work of Killian, Jackson, Ingals and others, in removing foreign bodies from trachea bronchi and œsophagus, has led to the impression that tracheo-bronchoscopy is useful for this only. At the present time the bronchoscope is used more and more frequently for direct examination, diagnosis and treatment of diseased conditions of these organs.

By use of the naked eye with this instrument, we are greatly aided in diagnosis and treatment.

In upper tracheo-bronchoscopy the tube is passed directly through the larynx and trachea into the bronchi. In lower bronchoscopy a lower tracheotomy is done, and the tube passed through the fissure directly into the bronchus. One should be prepared in every case to do a tracheotomy when necessary.

The method of direct inspection of these organs (trachea, larynx, bronchi and esophagus) for pathological conditions, is of comparatively recent date, and has been of such wonderful assistance in the diagnosis, treatment, alleviation and cure of diseases of these parts, that we approach the subject with enthusiasm, and commend this method of examination and treatment to the profession, hoping that they will further acquaint themselves with this method that added such brilliant results in laryngoscopy.

The X-ray and fluoroscope are of material

aid in locating foreign bodies. With metallic substances the outlines are sharp and distinct, the character of the object defined, and its exact location outlined. In the examination for morbid growths, the results are less definite.

In tracheo-bronchoscopy and esophagoscopy a local or general anesthesia may be used. The examination of the bronchi is perfectly feasible under cocaine anesthesia, especially if a full dose of morphine and atropin be given. The morphine adds courage rather than anesthesia, and the atropin checks the secretion of mucus, that is so easily excited on any manipulation of the larynx and trachea and interferes with examination.

Chloroform is preferred to ether as a general anesthetic as it excites less secretion than ether, and can be more easily administered.

The new method of rectal anesthesia is ideal in many ways, as it does not interrupt the work or interfere with the operation, nor does it excite mucus secretion as with the other methods of anesthesia. I have used this method in work on the nose, throat, bronchi and esophagus with very satisfactory results.

Under local anesthesia the patient may be examined in an erect posture, but with general anesthesia the prone position should always be used.

The writer has employed the direct method for examination of and removal of foreign bodies and morbid growths in the esophagus, trachea, and bronchi, in strictures and obstructions of the esophagus, and in local ulcerations and inflammations in the larynx and trachea, and in securing specimens for microscopical examination.

The following histories are chosen to show the various cases in which the bronchoscope has been of invaluable use. In some of these cases the Schoonmaker bronchoscope was used with success after other instruments had failed.

CASE 1.—Papilloma of trachea. Louis N., age 26 years, born at Heidelberg, Germany.

*History.*—When eight years old, he had diphtheritic croup requiring tracheotomy, which was done by Dr. Czerny. The tracheotomy tube was removed on the eighth day. Some days later he was suddenly taken with severe dyspnoea; the tracheal wound was reopened without anesthesia. Tube removed in ten days, and wound healed by granulation.

He consulted me in 1912 for difficulty in breathing which he first noticed six years after the tracheotomy.

*Examination.*—General health good. Thyroids enlarged. Cicatricial scar in lower part of neck in median line. Bronchoscopic examination revealed tracheal growth partially filling tube.

*Diagnosis.*—Papilloma in site of cicatrix of tracheal wound.

Some time later the elongated papillar growth was destroyed with a specially made electric cauterly tip, only one application being required.

He has remained free from dyspnoea since cauterization.

CASE 2.—Bone in esophagus. Harry K., age 36 years, Harlem Hospital, Nov. 4, 1913.

*History.*—On November 1st, while eating soup with noodles, swallowed a hard substance, which caused severe pain. He went to his physician who told him that the object had passed into the stomach, and that the pain was due to irritation of the esophagus. Four days later he was admitted to the hospital, complaining of pain and inability to swallow solid food, and liquids were swallowed with difficulty. Had constant pain in median line over upper part of chest. Felt sure he had swallowed a piece of bone.

X-ray examination was unsatisfactory, but showed dark object in esophagus opposite fourth or fifth dorsal vertebra.

We attempted bronchoscopic examination under cocain anesthesia. Object was seen deeply imbedded in esophagus, which was congested and swollen. The object was seized with the forceps and four unsuccessful attempts made to remove it. Patient nervous and much exhausted and bleeding obstructed the view.

The patient was put to bed, and two days later (eight days after the bone was swallowed), rectal anesthesia was administered by Dr. Lumbard, the esophageal tube passed and bone removed with difficulty, the forceps slipping off several times.

The bone was triangular in shape with sharp edges and corners, one-quarter of an inch thick by one and one-eighth inch on edges and one inch on base.

Patient became cyanotic during operation and a lower tracheotomy was done by Dr. Haynes. Recovery uneventful.

CASE 3.—Pin in larynx. Mrs. F. E. S., age 30 years, referred by Dr. Steel.

*History.*—While dressing, she placed some pins in her mouth; during a fit of laughter she aspirated one into the larynx; this caused severe dyspnoea and coughing, and pain in swallowing and talking. Her physician was unable to remove the pin and brought her to Dr. Steel who referred her to me.

Any attempt to examine the larynx with the laryngeal mirror caused severe pain and dyspnoea with spasm of epiglottis and larynx, and I was therefore unable to get a view of the part. Under thorough cocain anesthesia I was able to use the split spatula of the bronchoscope, draw the epiglottis forward

and this brought the pin into view. It lay between the vocal cords, the sharp point imbedded in the thyroid cartilage and its round head beneath the epiglottis. The pin was grasped with the forceps and easily removed.

The position of the pin readily accounted for the severe spasms on any motion of the parts in talking or on manipulation.

CASE 4.—Esophageal cancer. William B., age 40 years, referred by Dr. B., June 20th, 1911.

*History.*—Some three months ago he had some trouble in swallowing. This increased gradually until he was unable to take solid food and liquids were taken with difficulty. He was losing weight and looked pale and anemic.

Physical examination failed to establish a diagnosis. He was placed in the Post-Graduate Hospital and kept under observation for a few days. The X-ray showed dilated esophagus in middle third with constriction and morbid growth in lower third. Examination of specimen secured by punch forceps passed through oesophageal tube of bronchoscope showed it to be carcinoma.

Obstruction soon became complete, and patient unable to take liquids. A gastrostomy was done and food administered through canula.

Patient rapidly failed and died two months later.

CASE 5.—Gold crown in right main bronchus. George B., age 72 years. Case brought to Post-Graduate Hospital by Dr. Quimby, October 27, 1913.

*History.*—While having gold crown placed on tooth, suddenly gasped and crown disappeared; coughing followed.

Flourescope showed crown in right main bronchus open side up.

Cocain anesthesia, 20 per cent, to larynx. No. 11 bronchoscopic tube passed, crown seen open end up. On second attempt it was seized with forceps and removed with bronchoscope. Remained in hospital over night. Was seen on the 29th. Old bronchial rales present, but no edema or irritation.

No complications.

This case was interesting as the crown could be seen to move up and down as patient exhaled and inhaled.

CASE 6.—Open baby pin in right bronchus. Martha C., age 13 years, December 1, 1913.

Case referred by Dr. P. from family physician, with a history of having swallowed pin two days previous to operation. On the evening of the following day was admitted to the Post-Graduate Hospital. There was then no change in her voice. The next morning an X-ray picture was taken, showing the object to be in the neck, median line, at about level of tracheal ring. Dr. F. asked me to be pres-

ent. He thought object to be in upper esophagus and easily removable. Laryngeal examination before anesthesia failed to show object. Under ether Dr. F. was unable to feel object by finger or reach object by ordinary forceps; therefore a No. 11 tube was passed into esophagus and to stomach; no object was found; there was no trouble with respiration. Considered passed into stomach. As a precaution a No. 9 tube was passed into trachea and object recognized in right bronchus and removed by Dr. Forbes.

CASE 7.—Five cent piece in esophagus. Clara G., age 17 months, admitted to children's ward, Post-Graduate Hospital, September 10, 1913.

*History.*—Four days previous to admission swallowed a five cent piece. Was unable to swallow solid food.

X-ray examination showed object in esophagus.

Under ether anesthesia object was easily removed with esophagoscope, by Dr. Forbes. Uneventful recovery.

CASE 8.—Safety pin in esophagus. Murial Z., age 7 months, referred by Dr. S. Lloyd, May 6, 1913.

Patient swallowed safety pin four days previously.

X-ray examination showed open safety pin in lower end of esophagus.

Under ether anesthesia, pin seen clearly; unsuccessful attempt made to close pin and turn it through tube. It was pushed into stomach and removed by gastrostomy.

Cured.

CASE 9.—Tack in right bronchus. Morris J., age 34 months. Admitted to Post-Graduate Hospital April 13, 1913.

*Diagnosis.*—Right lobar pneumonia.

Treated for this condition, fever, cough, expectoration with blood, looks chronically sick.

April 20th: Dullness over entire right lung posteriorly at apex and base; voice and respiratory sounds distant. Aspiration of pleura negative.

April 23rd: Mother spoke of child possibly having swallowed tack. X-ray picture taken showing tack in second division of right bronchus.

April 25th: Attempted removal with Brunings bronchoscope unsuccessful, as instrument failed.

April 27th: Operation with Schoonmaker bronchoscope: Foreign body seen, and removed under chloroform anesthesia. Brass headed furniture tack, head downward.

April 29th: Respiration normal.

April 30th: Slight edema of old infiltration of lung.

May 4th: Discharged.

There is little doubt in this case but that the foreign body was the primary factor in causing the pneumonia, and that the chance remark of the mother of the child's having swallowed a tack led to the X-ray examination, the discovery and removal of the tack saved the baby's life.

## CONTRACT MEDICAL PRACTICE—AN ECONOMIC STUDY.\*

By ALBERT T. LYTLE, M.D.,  
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**M**EDICAL economics peremptorily demand of the physician careful consideration and scientific study. The march of progress has brought the practice of medicine nearly within the embattled ramparts of business. The altruistic and humanitarian principles that have always been the rule and guide of the physician in his economic relations with his fellow men stand perilously near annihilation; they are ridiculed as obsolete, assailed as hypocritical and branded as flagrant lies.

It is manifestly unfair for the successful members of the profession who have achieved wealth to unconcernedly permit the unfortunate ones to do all the fighting to correct abuses; in their correction the aid of dominant men is vital. Neither is it fair or politic for the propagandists against any single form of economic injustice to cry out against it from the house-tops, to engender indignation reprisal and to create a cold neutrality among those vitally concerned.

The medical man who conscientiously meets the many exacting requirements of his profession has little time to create a deliberate judgment on medical economic questions, yet, nevertheless, it is his bounden duty to do so, that the public may extend to the profession a heartier and greater measure of co-operation and support.

The profession, individually and collectively, should so act that no one could possibly say with a writer in THE NEW YORK STATE JOURNAL, for the month of March, 1914, that: "Never in the history of the United States has there been a time when the public distrusted the medical profession as much as it does today. Never in the history of the country was there a time when quacks were so numerous and so successful in a financial sense."

Notwithstanding the attitude of a few, an authoritative definition for Contract Medical Practice does not seem to exist. Custom and usage have not as yet limited its application to any one class of agreements involving the practice of medicine, nor positively separated such, into good and bad. The law has not as yet weighed all the various forms of contract medical practice

\* Read before the Medical Society of the County of Erie, April 20, 1914; Eighth District Branch, Medical Society of the State of New York, at Niagara Falls, September 22, 1914; Rochester Pathological Society, at Rochester, November 5, 1914.

to determine the legal or the illegal so that the people may be protected from injustice and fraud.

Woolsey, an authority, writes: "A contract is one of the highest acts of the human free will; it is the will bending itself in regard to the future, and surrendering the right to change a certain, expressed intention, so that it becomes morally and jurally a wrong to act otherwise." Contract is a term implying an agreement regulating the social relations of citizens with one another and with the government and forms the very foundation of the body politic. Thus it might be said that contract, not "might makes right." In the broadest view the services rendered on request to "Richman, Poorman, Beggarman, Thief, 'by' Doctor, Lawyer, Merchant, Chief" are contracts. The report of the Judicial Council A. M. A. for June, 1913, says: "All medical practice is contract practice either implied or expressed between the physician and the patient if the patient be of legal age, or between the physician and the parents or guardians of a minor." On the other hand a restricted interpretation of contract is, according to Parsons, "An agreement between two or more parties for the doing or the not doing of some definite thing." From these considerations contract medical practice might be defined as any agreement, oral or written, whereby a doctor of medicine for a pre-arranged compensation promises to give professional services at or during a future time to known or unknown individuals, or for undetermined conditions. By the phrase "Medical Practice," is meant all that is implied in the degree "Doctor of Medicine."

With this definition as a guide a classified list of medical practice contracts known to exist can be arranged for study as below:

#### GOVERNMENTAL.

##### National:

Army—Line, 1; Hospital, 1.  
Navy—Line, 1; Hospital, 1.  
Public Health—Sanitation, 1; Quarantine, 1.  
Pension—War, 1; Age, 1; Health, 1.  
Immigration, 1.  
Foreign Service—Expedition, 1; Diplomatic, 1.

##### State:

Institution—  
Hospital—Blind, 1; Insane, 1; Habit, 1;  
Tubercular, 1; Epileptic, 1; Cancer, 1;  
Feeble Mind, 1.  
Reformatory—Prison, 1; School, 1.  
Military, 1.  
Laboratory—Clinical, 1; Research, 1.  
Public Health—Sanitation, 1; Statistics, 1.

##### County:

Hospitals, 1, 3.  
Eleemosynary, 3.

##### Municipal:

Hospital—General, 1; Contagious, 1; Tubercular, 1.  
Reformatory—Jail, 2; Detention, 3.  
Public Health—School, 3; Sanitation, 3;  
Eleemosynary, 3.  
Laboratory, 1.  
Department—Fire, 1; Police, 1; Public Works, 1.

#### CIVIL.

##### Insurance:

Life—Regular, 1; Mercantile, 3; Association, 1.  
Accident, 1.  
Health—Regular, 1; Corporation, 3; Lodge, 3.

##### Common Carriers:

Railway—Steam, 1, 2, 3; Electric, 1, 2, 3.  
Marine, 1.  
Liability—Employee, 3; Public, 3.

##### Corporation:

Liability—Public, 3.  
Employee—Company, 2; Club, 3; Lodge, 3.  
School, 1.

##### Legal Experts, 2, 3.

##### Division Fees:

Professional—Doctor, 3; Nurse, 3.  
Commercial—Druggist, 3; Instrument House, 3; Apparatus, 3; Sanitarium and Hospital, 3; Undertaker, 3.

##### Personal:

Family, 1; Individual, 1.

As civilization has advanced there has arisen the assumption of a definite financial obligation for indefinite future needs based on definite future income; also an effort to secure a definite future income for indefinite future services in order to supply the indefinite future need. This attempt at forwardness is a good thing but it often conceals a sting; not infrequently it is a bad bargain for all concerned. Business of all kinds has passed from the satisfying of immediate needs at prices commensurate with supply and demand, to promising to fill probable future needs from an estimated future supply at a price made in the present—an out and out gamble. This has hardly made for the production and delivery of the best possible, but rather of the most inferior the buyer will accept, while at the same time it has inevitably increased the cost both relatively and actually. The multiplication of urban and manufacturing populations outstripping suburban and agricultural ones has been a great factor in developing the dealings in future. Division of labor, trade combinations and labor unions have also fostered this kind of dealing—the \$4 down and \$1 a week—the bargain sale.

These conditions along with the increased cost of living that naturally follows them, in conjunction with the evolutionary changes in his own



field of labor, have conspired to make the physician eager to obtain similar contracts securing definite future income. The Judicial Council of the A. M. A. says: "The result on the medical profession of this economic situation is that hardly more than 10 per cent of the physicians in the United States are able to earn a comfortable income." Contracts have been used as a means of introduction to the community—a species of ethical advertising, for, with the increase in population and its concentration in towns, with money the gauge of social position, the doctor has become a much smaller toad in the community puddle. The contract furnishes a substitute for the care of the poor that are always with us—for, the remarkable increase of hospitals, dispensaries and like eleemosynary institutions, and the invasion of the prescribing pharmacist and the attending nurse, have taken from the doctor, especially the new one, an enormous field of labor among the poor in which formerly he acquired necessary experience and confidence in his calling. An editorial writer in a recent discussion of a cognate subject says: "We have made progress, surely, but the pertinent and stubborn fact remains that, in spite of our progress, we have more sickness today in this country (in proportion to population) than we ever had before." Again, a large percentage of medical men begin the actual practice of their profession with no cash capital, often with a heavy debt; fondly they hope that large numbers of patients, profitable in fees but await the hanging of the new sign to seek their services; as time passes and the patients fail to come while the debt increases and the wolf begins to howl, a little contract, however unfair, has all the attractions of the straw to a drowning man. Again quoting from the Judicial Council report: "The medical profession finds that an adequate medical education requires of students a constantly increasing length of time and money for its attainment. It is the most costly of all the learned professions, and with living expenses constantly increasing and with the physician's opportunities of earning a livelihood from the general population constantly diminishing, and further with the profession devoted to self-immolation by its constantly increasing development of preventive medicine and sanitation, we are forced to consider the situation as one produced by economic forces and that lodge practice under certain circumstances is one of health insurance that must be accepted and controlled, not condemned and shunned."

Withal the medical contract has come to stay and it is reasonable to assume that it is but in its infancy. It is the duty, therefore, of the medical profession to separate the wheat from the tares, to cultivate and conserve the one, to reject and destroy the other. Admitting that Contract Medical Practice is firmly rooted in fertile soil and bound to grow, what standards shall be adopted

whereby that which is good shall be recognized and fostered, while that which is bad shall not only be recognized but strangled?

Its intimate relation to the vital currents of life; its influence on the advancement of knowledge, on the development of civilization and on the efficiency of man—all demand a high degree of honor, a large measure of dignity and an ardent devotion to "noblesse oblige" in the devotees of the healing art. Worth not riches—highmindedness not sordidness, should be the guide. No contract that hinders, stultifies or prevents the practice of these virtues should be countenanced by the profession. Not only should contracts permit, they should also promote the pursuit of these ethical requirements and it is of equal importance that the compensation should be commensurate with the service value and the technical skill required. The measure of remuneration should be the worth and skill demanded, not the time to be taken or the quantity of service to be rendered. The one is degrading, a gambling proposition of the lowest type, dragging the robes of our loved Hygiea into the mire of deceit, fraud and degeneration, the other elevating and honorable, whereby her raiment shines with a radiance unparalleled.

Measured by these standards the several varieties of Contract Medical Practice fall naturally into three groups—Good, Bad, and Vicious—which are marked respectively 1, 2, and 3 in the above list, and the facts support the grouping.

The good are good because they are permanent, they demand special ability of the incumbent, they offer unusual opportunities for professional improvement and advancement, they occupy the entire time of the doctor to the exclusion of all private practice, they secure a reasonable competency; where only a part of the time of the doctor is taken as in insurance examinations the character of the service is high and stimulating and the amount of the fee about equals the value of the skill required.

The bad are bad in that they tend to corrupt the honorable relations between patient and doctor, in that the physical welfare of the patient—the very soul of the practice of medicine—instead of being the primary consideration, is made less than secondary to the interests of physician's employer. This view does not for one moment condone the cupidity of the doctor who connives at malingering or who so far forgets his manhood as to be a traitor to the just interests of his employer. They are also bad for the reason that notwithstanding their permanency the pay for the service rendered is frightfully below the standard for equal responsibility in other professions or in private practice; the character of the service when not inefficient is of high grade but generally takes so little time as to engender slipshod methods of work and not to encourage improvement.

The vicious are vicious because they blind the holder to the vital virtues mentioned, because the tenure is shifting and dependent upon qualities the reverse of these virtues; because while openly demanding much time and attention they permit neglect and inattention, because holders thereof, frequently immature in medical experience, acquire vicious habits of thought and action which are never corrected or which forever taint the practice of the physician who has once acquired them. The welfare of the patient, of the community, yes, of the state, irretrievably suffers from the inefficiency of the doctors attacked by the canker of these contracts. As our profession has so vital a place in the community it is wholly unnecessary to emphasize the damage that may be done thereby. With these contracts so degrading to the "morale" of the doctor, so harmful to the health and physique of the patient and so hazardous to the welfare of the public, it is not surprising to find the compensation literally a pittance, no greater than that dropped into the beggar's cup. The fees would be a mirth-provoking joke if the whole humiliating matter were not so sordid.

It is easy to see how bad and vicious contracts blind the public to the honor, dignity and nobility of our profession and make it think us a band of fools and hypocrites. It is easy to understand how these contracts weaken the patient's confidence in the ability of the physician so essential to success in the practice of medicine. It is easy to see how the small compensation so eagerly accepted leads the public to believe the fees generally asked in private practice to be excessive. And, it requires no novice to appreciate their demoralizing and inhibiting effect upon the forward progress not only of the individual but of the whole profession.

How shall these conditions which present themselves in such formidable array be met? The entire question seems so revolutionary, so opposed to the ethical principles governing the practice of medicine that indiscriminate condemnation is at first the tendency of thought and action. Dr. Robert A. Allen in the *Journal of the A. M. A.* for July, 1914, says: "There is scarcely a city in the country in which medical societies have not issued edicts against members who accept contracts for lodge practice." Nevertheless the world does move and all things do change; hence, it becomes a duty critically and dispassionately to analyze, to laud and encourage the good, to frown upon and correct the bad, to combat and eliminate the vicious. As the report so frequently quoted says, "The remedies for conditions here discussed lie partly in the hands of the American Medical Association, partly in the hands of the constituent state and county bodies and partly in the hands of the medical profession as individuals."

But as one writer says: "It is useless to struggle with 'whereas's and resolutions' against these

economic facts." The scientific way to handle this extremely important economic situation is to ascertain the problems involved and to seek their solution. This can be done by each County Medical Society creating a committee on Medical Economics whose functions shall be to study and to make recommendations on all questions of an economic nature.

Probably the first great problems to solve are minimum compensation and service-value. The rapid development of surgery, the startling growth of the specialites, the immense and expensive scientific equipment required, the great cost of a medical education, the pharmacist and the nurse, all have had a disastrous influence upon the former well-balanced remuneration of the profession. In this great land of personal liberty each is, or rather, was permitted practically to place a price upon his own endeavor. But as before stated, trade combination and division of labor have rapidly changed this so that now minimum values for definite units of endeavor are being established.

While the standards in the business world for wage, cost and profit are manifestly impossible in the practice of medicine, yet the present chaotic state of fees and service-values should be corrected; minimum and graded values should be placed upon medical service-values that the public and the law can understand. It is manifestly unfair to both patient and doctor that service-value remuneration should be measured by the ability of the patient to pay as is the rule today. One writer says that it is, "A fallacy that it is justifiable to exploit a patient for all the money that can be squeezed out of him and not on the basis of giving the best service possible."

In the use of the term service-value a very different thing is meant from that of fee or remuneration. Remuneration or fee is what one accepts for the service rendered, it may be greater or it may be less than the service-value of the service rendered. Service-value is a constant, remuneration or fee is a variant. For example, the service-value of the bricklayer is based upon the number of bricks he lays in workman-like manner in a unit of time—this is the same the world around—but the bricklayer's wages is very little dependent thereon. Again, the builder knows the service-value of the laying of a thousand brick anywhere, but the exact cost is always unknown because dependent upon many variable factors; there are grades of bricklaying—face, back, fill—each of which has a constant basal value—the same everywhere—but the cost of laying each grade is dependent upon other continuously varying factors. Almost every intelligent human being has a more or less true notion of the service-value of the various trades and of the different staple and manufactured commodities, but one often has little notion of the exact charge for service rendered or article desired. In medical practice there should be

similar service-value standards. The disability insurance companies have already determined the service-value of many strictly medical services. The lodges make arbitrary and empirical compensation. While the workmen's compensation law reads, "All fees and other charges for such treatment and services 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 like standard of living." And today, as reported in its August, 1914, *JOURNAL*, the Medical Society of the State of New York was practically obliged to accept the fee bill presented by the insurance companies.

How and by whom are these values determined? Are they true and well balanced? These medical problems are identical with those that the scientific management of every industry is trying to solve, and should receive the same careful study and consideration.

The next great problems are those of education. A committee reports that, "the value of the services of the general physician are still misunderstood, are still estimated far below their worth." The public should be taught the nature of medical service and what qualities such service demands in the doctor so that no practitioner of medicine will be able to render less valuable services no matter what the compensation may be. The public should be taught the standardized fee values of medical services and by what process they are determined. After standards of fee and of service-value have been established the public should be warned of the dangers to them in the employment of any doctor who willfully violates them. The medical student should be carefully taught service-values, the scale of fees and the nature and effects of good, bad, and vicious contracts, so that upon entering the actual practice of medicine he shall have a proper guide whereby he may avoid falling into the pits of wickedness.

It seems to the writer that contract practice as well as all other quasi-public questions of the profession can best be settled through the medium of the established County Medical Societies and the State and National Societies with which they are affiliated. All other medical societies of whatever name or nature should be affiliated with these societies or governed by their rules and regulations. Every honorable doctor of medicine should be a member of a County Society; every medical student should be shown the use and the necessity of becoming at once a member of the medical society of the county in which he locates to begin the practice of medicine. An obligation compelling compliance with the standards adopted by the entire profession as represented by these societies should be one of the requirements of membership. In other words, unionize the profession but with this dif-

ference from the labor unions of today, the actuating principles shall be the welfare of the patient coupled with the welfare of the doctor. Where laws are necessary to control the situation, these societies should secure their enactment. The very satisfactory condition of affairs in Norway as compared to the agitation in Russia, Denmark, England, Germany and Australia over health insurance is undoubtedly due to the efficient organization of the medical profession in the former country, for in Norway quite every physician is a member of the Norwegian Medical Association. In Niagara County, N. Y., the following has been accomplished—quoted from the *Buffalo Express* of January 18, 1914, "The Twin City Academy of Medicine has made arrangements whereby no physician in the Tonawandas will accept contract work with any of the local manufacturing plants or fraternal organizations at any other rate than the regular family rate. Heretofore, contracts were made whereby medical service was rendered at a very low rate. This matter was discussed at a recent meeting of the doctors' association and it was voted unanimously to end such contracts."

By proper methods of publicity the public should be made to realize that the object and the aim of the profession is altruistic in that the elevation of the practice of medicine is only desired for public benefit—to prove to the people that no doctor of medicine not a member of a County Society should be worthy of trust or consideration; to show the public that any contract not having the stamp of perferment by these societies is against the public welfare—in the end that justice may be meted out to all concerned.

There is a way that could be established at once from which immediate results might be secured while later valuable statistical data could be obtained. A way that would aid in solving the intricate problems of service-value and service-remuneration; a way that would educate the public as to the nature of medical service and as to what minimum service should be rendered in a given case, that way is by means of a Mutual Health and Accident Insurance Society organized, incorporated, financed and managed by physicians.

As Dr. Robert A. Allen says: "It's not surprising that workingmen who have learned to organize themselves in trade unions should also unite for mutual protection against accident and illness. It is not surprising that American workingmen should be following in the footsteps of their European confreres with their Friendly Societies and their Krankenkassen. The only wonder is that they should have been so slow to imitate them. That the "sick-club" idea is rapidly taking root in the United States is not a matter for doubt." Pray, why should not the medical profession likewise organize?

Take Buffalo as an example: It contains,

let us say, about 500 reputable physicians and has a population of about 500,000 who are paying say \$500,000 annually for strictly medical and surgical services—a yearly tax of \$1 on each inhabitant, a meagre sum for the character and value of the services rendered.

The Health Insurance Association so formed should not agree to pay money to defray the expense of an illness occurring during the life of the policy, but should agree to furnish medical and surgical services and treatment, medicines, dressing, hospital accommodations and nursing attention during the period of a disability occurring during the life of the policy. The physicians and surgeons rendering such service should be stockholders or members of the association and they should receive from the association fees according to a proper schedule. To minimize fraud a few high salaried all-time physicians of marked competency should be appointed as inspectors or supervisors.

The annual overhead expense of conducting such an association of 500,000 policy holders would probably not exceed \$500,000; while the annual operating charges, if my former figures are anywhere within reason, would range between \$1,000,000 and \$2,000,000. This, if true, would indicate an annual policy cost of \$5, hence if an annual premium of \$10 was secured from each policy it should provide enough to cover cost and a tidy sum for sinking fund and dividends.

As the object of such an association would not be the earning of dividends or the accumulation of capital, in time the actual cost to policy holders would represent the true value of medical attention based on the highest grade of service at a proper remuneration; while the physician and surgeon would be able to secure a sure and self-respecting living.

#### TO RECAPITULATE:

1. Contracts are inevitable.
2. Contracts should be regulated for the benefit of the physician and patient.
3. Determine medical service value or cost.
4. Determine minimum medical service remuneration, or selling prices.
5. Educate the people about medical service-value.
6. Educate the medical student on service-value and remuneration.
7. Bring all eligible practitioners into the medical societies.
8. Unionize the profession.
9. Create a Mutual Medical Service Association.

## DIETETIC MALNUTRITION IN INFANTS AND ITS TREATMENT.\*

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**I**N presenting for your consideration the subject of malnutrition I do not wish to disappoint your expectations for something new, either in regard to the diagnosis or treatment on the condition but rather to emphasize some important truths.

The recent contributions to our knowledge of this subject, particularly those of Finklestein and Meyer, have made a new classification of the disorders of digestion and malnutrition is described by the name of decomposition; but for the present, the term malnutrition will answer our purpose. Its occurrence is so common and its treatment so varied that a momentary review of the subject will, I hope, be productive of some good. Malnutrition is a secondary condition and not a disease. It is characterized by a stationary or decreasing weight, a sensitive digestion, more or less anemia and an unbalanced nervous system. It occurs in both breast and bottle fed infants; in the former usually mild in degree but the latter running a more severe course. The primary causes are many, foremost among them being lues, tuberculosis, infectious diseases, and digestive disorders of the severe type. Of infantile malnutrition due to specific diseases it is not my intention to speak of at present but only of the malnutrition due entirely to faulty diet.

Owing to the prolonged use of proprietary foods or the unskilled use of cows milk, by far the greater number of cases occur in the bottle fed. In the breast fed, malnutrition occurs in about half as many cases as in the bottle fed and is here due to a diminished quantity or quality of breast milk or a disproportion of its constituents. The matter of environment, too, is often a contributory factor yet in some of the worst cases, the environment may be all that could be desired but the degree of malnutrition is severe, due entirely to diet. Further the food may be good but its preparation bad; the quantity may be sufficiently scientific and the intervals badly judged. It is clear, therefore, that this malnutrition may be the result of bad quantity of milk, either a deficient or over great quantity, bad timing of feeding or ignorant methods of food preparation, or a combination of these factors. And the perplexing question is always, which of these causes or combinations has produced this condition and again if the result of one factor, what particular element in its make up is to be suspected.

Out of 200 babies registered at one of our milk stations, 17 we classed as suffering from malnutrition, 11 of these being bottle fed and 6 breast fed. This includes only those cases due

\* Read before the Chautauqua County Medical Society, December 8, 1914.

to dietary causes. No special food was at fault, Condensed milk and Horlick's, however, were the worst offenders. Mellin's and Eskay's were noticeably absent due to the fact that these are generally used with cows milk. Cows milk had been tried in most cases but the method and strength had been out of all proportion to the digestibility of the child, consequently the food was unsuccessful. We cannot emphasize this too strongly. Where there is a failure charged to cows milk, the suspicion must be strong that its strength was at fault.

Heretofore we considered that the top milk method was the last word in the feeding of babies, but this is now a thing of the past and only used in special cases. Today we are convinced that simplicity is the keynote, therefore the reason for giving the proprietary foods that their preparation was easy, is no longer a justification for their use. We must admit, however, that there are many cases fed successfully on the proprietary mixtures and at times they are valuable as temporary foods, but I have yet to see a dissatisfied mother after her babe has been changed to cows milk.

There are three gradations of this condition of dietary malnutrition which I will divide clinically for the sake of clearness. First class, mild malnutrition in the breast fed. The weight is about two pounds under the average; the muscles are somewhat flabby; there is mild anemia; the child is restless and irritable. It usually occurs at three periods, at two months of age when the mother has tried to nurse and is unsuccessful, at six months of age when the breast supply naturally begins to diminish in quality and quantity and at 14 or 15 months when the nursing is prolonged without other food. Many of these cases develop the early symptoms of rickets and we should be constantly on the watch. In fifteen cases of rickets entered at one of our milk stations seven were in the breast fed. The early stages of rickets in all these cases occurred within the above periods, therefore it is important that we should keep this fact in mind.

*Example of Breast Fed Malnutrition.*—Chas. Bell, weight at birth 7 pounds and 8 ounces, admitted to the milk station at ten weeks of age, weight 7 pounds and 14 ounces. Mother complained that the child cried constantly, was never satisfied and wanted to nurse continually. The stools were green and there was occasionally vomiting. We gave cows milk starting with one ounce of milk and 3 ounces of water, with the addition of one-half teaspoonful of cane sugar. In two weeks the food was increased to two and one-half of milk and the same of water, with one teaspoonful sugar to each feeding. The vomiting ceased, the stools became better and we had a contented baby. At the present time the baby has gained on an average of 8 ounces each week. If this mother had given a proprietary food the result might have been disastrous.

These cases tolerate milk well because there has been no great damage to the digestive system.

The second class is the moderate degree of malnutrition in the bottle fed. These babies have been fed on one or two foods for a considerable length of time, usually months. The first food not producing a satisfactory weight another is tried with the same result. The foods are ordinarily well digested and the child is fairly comfortable, yet the weight is stationary or the gain is very slight. The addition of cows milk to the dietary of these cases is all that is necessary to get the desired result. But we must again urge the caution that all amounts be at the beginning conservative and increased as the toleration indicates. A baby moderately hungry for a day or two is far better off than one almost killed by kindness.

The third class is characterized by a constant loss of weight, anemia, flabby muscles, vomiting or diarrhoea and constant crying. Many of these cases are either leucic or tubercular but give no definite symptoms or positive reactions. These are the cases more annoying and vexing to the physician than many a contagious disease.

*Example.*—Baby Ford, admitted to the milk station at two months of age, weight 5 pounds and 6 ounces. Weight at birth was 7 pounds. All kinds of foods had been tried. Cows milk was given at one month of age half milk and half water, 6 ounces in all. We could not expect this strength and quality to be successful considering the digestion of the child. It vomited the milk and had green stools, so another food was tried. There was no clinical evidence of lues, Wassermann was refused. von Pirquet was negative. Scurvy was suggested because of the apparent pain in handling the baby especially when the diapers were changed. The treatment consisted in giving skimmed milk, boiled and peptonized. Later the cream was added and the peptonizing was omitted. Cane sugar was used in one-half teaspoonful to each bottle. Curds would appear in the stools and the baby showed signs of being distressed. The cream was removed and there was a cessation of the symptoms. When the cane sugar was increased the stools became more frequent. Dextromaltose was given in place of the cane sugar but was immediately vomited. Two per cent cane sugar was then added as the regular diluent. The cereal gruels either plain or dextrinized were not tolerated, water being the most satisfactory diluent. It must be remembered, however, that in many of these cases the gruels are of great benefit and should always be tried in a slow growing infant. One teaspoonful beef juice was given in every bottle and one teaspoonful orange juice given three times daily. This baby now weighs 12½ pounds, a gain of one pound a month, in spite of its many upsets and diet of skim milk which was given probably half of the time. It probably had an intolerance to fats as well as sugars. This is the type of

case which is far too common and the treatment is discouraging but with a careful study of the child's tolerance, the final outcome is usually successful. I could cite you many cases of this class where the gain was more rapid and the treatment more satisfactory.

The treatment of malnutrition is dietary and general. Breast feeding should always be encouraged and every effort made to maintain it where there is normal growth. When the breast is not satisfactory, one should not be too conservative in putting such infants on the bottle. When breast milk is good, it is better than any artificial food, but good artificial feeding is always to be preferred to poor breast milk. We now believe that longer intervals in the breast fed are conducive to better health. Most breast cases do better on a three or four hour interval when previously we advised two or three hour intervals. I am not satisfied about the efficacy of these intervals in the bottle fed. When commencing on cows milk it is well to give a cathartic, a bowel wash and a twelve hour hunger diet of saccharin tea solution. We have recently recognized that too long a starvation period is actually injurious to a baby. In the mild cases it may only be necessary to add cows milk gradually and at the same time to withdraw the present food. The breast cases are handled the same way unless there are reasons for sudden weaning.

In regard to the modification of cows milk in these cases, a very weak mixture is essential at first. Then the mixture is gradually increased according to the digestion of the child. In infants of normal digestion and those of the malnutrition type where the digestion is not seriously impaired, the ordinary milk formula is satisfactory. These are briefly as follows:

*First Month*—10 oz. milk, 2 oz. sugar water, 2 hour intv., 10 feed.

*Second Month*—1½ oz. milk, 2½ oz. sugar water, 2½ hour intv., 8 feed.

*Third and Fourth Month*—2½ oz. milk, 2½ oz. sugar water, 3 hour intv., 7 feed.

*Fifth Month*—3½ oz. milk, 2½ oz. sugar water, 3 hour intv., 6 to 7 feed.

*Sixth Month*—4 oz. milk, 2 oz. sugar water, 3 hour intv., 6 feed.

*Seventh Month*—5 oz. milk, 2 oz. sugar water, 3 hour intv., 5 feed.

*Eighth to Tenth Month*—6 oz. milk, 2 oz. sugar water, 4 hour intv., 4 feed.

You will notice that we have made no mention of the percentages and properly so because they are somewhat complicating and unnecessary. They can be figured out for reference. This method of feeding as well as other methods are often attended with some food injury. Our greatest error in this connection has been the erroneous idea concerning the curdy stool. This curd according to Finklestein is not undigested casein but composed of fatty acids and bacteria, and is only seen in babies fed on raw milk. Therefore the fats and the sugars are the usual disturbing elements in milk. Proteids are di-

gested in relatively high percentages without any disturbance. This is shown by the use of albumen milk in cases of weak digestion. The treatment of a fat injury therefore is not necessarily the withdrawal of the cream but a change or diminished sugar content. The stool resulting from a sugar injury is apt to be liquid, foul odor, sometimes green with varying amounts of mucus. The treatment of which is a withdrawal or change in the kind of sugar. Are there infants who will not tolerate cows milk? Occasionally we see a case where the milk is digested with great difficulty but an actual idiosyncrasy is rare.

Where the digestion is very feeble or has been badly damaged as in the severe cases of malnutrition there are various ways to adapt cows milk to the digestion. Skim milk boiled will answer in the majority of cases. Boiling the milk increases the digestibility and also has a tendency to constipation.

Buttermilk is practicably the same as skim milk but with an increased amount of lactic acid. This is very advantageous in certain cases of weak digestion. It may be made from the lactone tablet easily. Buttermilk with the addition of a gruel and sugar may be used for a long time with good results.

The use of whey we have found beneficial in some cases notwithstanding the accepted fact that the milk sugar is likely to be injurious. Babies fed on whey are apt to have flatulence. The stools do not improve in number but rather in quality. Skim milk is added to the whey when there is an indication for more food.

Albumen milk is especially useful when the digestion is intolerant to other foods but on account of the difficulty of preparation it is not practicable in the majority of homes. A fairly good preparation is made by the use of the prepared casein and buttermilk. I would recommend a more general use of this milk, in all upsets of digestion.

Next in importance to diet is general management, air being the most essential. Many of these patients will not improve on any formula until fresh air is secured. The natural tendency for any mother who has a sick child is to keep it indoors and never allow fresh air.

Cool sponging is oftentimes valuable and if there is good reaction it may be treated this way daily. Massage of the entire body with cocoa butter is beneficial. Drugs are the least important. Cod liver oil is given when the digestion is good; nux vomica to improve the appetite and a little wine when stimulation is indicated. Beef juice is well borne and serves as an additional nourishment. Orange juice is given in every case where it is tolerated.

To recapitulate.

Dietary malnutrition is a secondary condition due to the lack of proper food in the breast fed and a want of fresh food in the bottle fed.

Proprietary foods are the greatest sinners in the bottle fed and lack of knowledge in the breast fed.

This method of whole milk modification commends itself for its simplicity. Feedings are easy to prepare, and it is successful with clean ordinary grade of cows milk. And as a final word may we emphasize the necessity of a close scrutiny in every case the several factors that may produce infantile malnutrition and in all cases a conservative beginning with the whole milk method and a studied, careful, and gradual increase of each constituent as fast as tolerance can be certainly ascertained. With a fair knowledge of skim milk, buttermilk, whey and albumen milk, the ordinary cases of malnutrition can be treated by the general practitioner successfully.

### "OUR CHOSEN PROFESSION."

By LESTER R. MELLOR, M.D.,  
SYRACUSE, N. Y.

**W**HEN a man of today gives thought to the question, What shall be my life's work? he must be led in the selection of that profession or calling by the highest of motives.

He must consider the question thoughtfully and prayerfully and having finally chosen, he must endeavor to put his life into the work so that it shall truly be a life's work.

Many young men of today are entering upon the study of the greatest of professions, medicine. Some are undertaking the study of our profession with a fair knowledge of what the life of a physician means, with its trials, temptations, denials, its service to humanity, its successes and failures.

Some are entering this field of work, little realizing what an exacting occupation they have chosen. These are blind to all its realities and only see there graduation diploma conferring upon them the degree of Doctor of Medicine, and then expect the patients to line up at their office and resulting financial gain.

Others are entering this exacting profession, not from any humanitarian point of view, but as a means to make money.

Finally there are those, and very few indeed, who having a broader view of human life and its needs, realize in a large measure the sacrifice, devotion, years of study and obscurity necessary before they shall gain a foothold in their profession; these undertake the study of this great profession because they love to administer to others, to give health and happiness to the afflicted, to do the work of the great physician Christ who sought to do good to all.

To these, noble hearted, self-sacrificing men, comes the greatest blessing. They may work through years of obscurity doing each day the work which lies at hand, but doing it conscientiously and thoroughly, to them, comes that measure of success which is unquestioned.

Deserve success and you shall command it, is true in this as in all other callings.

To those who contemplate the study of medicine, I would urge: look well before you, consider what it means to be a guardian of the lives of people. To have in your keeping and the responsibility over the most precious thing under God's foot stool, human life. To be the guardian of family morals, the keeper of family secrets. You will be admitted into the heart of the home life where no one else dare tread. All the responsibilities of such associations will be yours to carry. A silent tongue, not given to slander but upholding the dignity of the home and its occupants. Are you man enough for this? Have you that stamina of character founded upon Christian faith and Christian living and Christian example?

Do not consider this greatest of professions as just a means to make money. If you do, it will be the greatest mistake of your lives. From the moment you consider it in this light you lose sight of the Christian vision, "A life devoted to the service of humanity." *Your* God is money and your endeavor to attain it fills your life with selfish actions to gratify lust for wealth. It deforms your character and stunts the spiritual growth of your soul; changing you from God's greatest handiwork to an ignoble being.

Medicine truly says, "He whose chooses me, must give and hazard all he has." Consider the years of study, of hospital service, the sacrifice which these years mean. Sacrifice of money and time, the chance to forge ahead in other callings.

I do not wish to discourage you, I only entreat you to consider fully the cost, in time, money and service and then decide whether or not it is worth while for you to enter and give and hazard all you have.

If you decide it is worth while, to give yourself in the service of humanity, then put your whole self into it and make your years of sacrifice and preparation stand as foundation stones upon which the future edifice of success will be built.

Descartes has said, "If it be at all possible to ennoble mankind it will be only through medicine."

Therefore let your character be beyond reproach, so that you may gain the confidence of your patients. Let there be no question as to your morality. The keeper of the family skeleton should be above suspicion.

Exercise judgment in the conduct of your life so that you may use to the best good the talents and faculties that God has given to you.

For truly a physician in the study of his cases needs, as no other ever does, all his senses ever alert. He utilizes them all in the detection and treatment of the various diseases which beset our bodies.

Having then undertaken the study of medicine with eyes wide open, with senses trained

to efficiency, ever alert to detect the inroads of disease, you are now ready to practice medicine.

Usually a beginner in music has to be driven to practice. Not so with a young physician just starting in practice. He is willing to be driven.

His early years of professional life will be years of lack of practice, years of continual study, waiting patiently for patients.

Truly a physician needs patients and patience to wait for patients.

I believe if you will have this indelibly engraved upon your memory it will be the ultimate making of your success.

Because you must realize that the people in your locality are not going to give up a good family physician of known reputation, for a young upstart of no reputation, you, whom they never knew existed. It takes time my boy. Emergency work is what counts for the beginner. It gives him an introduction to the neighborhood.

You will get patients who have exhausted the charity of Dr. Brown, Dr. Green or Dr. Smith, or who have floated around to various M.D.s. because none of them diagnosed their condition correctly. Do not discriminate against any patient. A patient is an advertisement whether he pays money or compliments. Keep in his good graces and he will always have a good word for you.

Never refuse a call if you can take it, charity or otherwise, for the same reason I have given.

If one has the good fortune to be helped by other physicians, he little realizes what is meant by waiting for patients.

If a stranger in a strange land with no help but competition from older practitioners, patience indeed becomes a virtue.

A practice attained by personal qualifications coming as the result of a reputation built up, is the best possible kind. That practice can be depended upon. It is built upon worth, quality, reputation and good service and is not the product of donations given by other physicians in the way of calls and assistantship, etc.

The hardest test that comes to a beginner, and by that I mean anyone within a five year practice, that test is to have the necessary sticktoitiveness to hold on until the success comes to him.

Of course a young physician as well as an old one should make acquaintances, but not become too familiar to prospective patients. As familiarity lowers dignity and minimizes confidence.

During the waiting years study, don't fall behind the medical status of the day.

Do good work conscientiously, go at each case thoroughly, take time enough, the people are willing to pay for good work and will advertise you because your work is thorough and not slipshod and superficial.

Let your work speak for itself, for it is by true and conscientious endeavor your reputation is made and true success attained.

Let your motto be "Reasonable fees for skilled service."

Make only necessary calls. Far better to lose a few dollars than to be called a robber. Free calls when deserving are appreciated and the giver thereof is considered philanthropic and not uncharitable.

### Notes from the State Department of Health

The department has had under consideration for some time the matter of a standard record book for health officers, and has now practically completed the preparation of such a book. There is usually no well-defined system of "bookkeeping" among health officers, so that it often happens that at the end of the year a health officer finds that he cannot account for a large amount of work, although he has been busy most of the time. This is unfortunate, because the layman is unable to correctly judge of the amount of work that a health officer does, and since the layman has to foot the bill, if he feels that the health officer's activities consist chiefly in tacking up a few quarantine signs, he is not inclined to be very liberal in his award.

So far as we know, no form for a record book has been heretofore devised that is at all adequate. The record book that the department has planned, after allowing for a list of the members of the board of health, indicating their term of office, provides, first of all, for recording the communicable diseases. Some of the headings are, name of patient, address, disease, laboratory findings, date of onset, date isolation begun, date isolation ended, cleansing or disinfection, physician, date reported, occupation, school attended, result, remarks, etc. Next comes a division for recording complaints and nuisances, the date, the person against whom the complaint is made, the nature of the complaint, the investigation of the health officer, the action of the board, the date of abatement. Next there is a division for recording deaths without medical attendance. There is next a section for recording commitments for insanity, a section for registering permits for the sale of milk or the establishment of labor camps, and a section for recording the inspection of public buildings and schoolhouses. A provision is made for recording expenses and supplies received from the department and their disbursement, and a section is provided for an inventory. Lastly, there are pages for miscellaneous records, such as the health officer's annual reports, the record of the prevalence of any unusual disease, the report of the public health nurse, new ordinances, records of labor certificates issued, etc. It is felt that if all this data is recorded from day to day, the health officer will be able to make an impressive report of activities at the close of the year.

The record book will last most health officers for several years. It has 550 pages, is substantially bound, and may be obtained from the State Printer at Albany. The expense for the book is, of course, a charge against the local municipality.

The department is also planning a filing cabinet for health officers. Considerable correspondence is carried on by health officers, many circulars are sent, and numerous report cards and laboratory supplies. If proper places are not available for all these, they are soon lost, and a large amount of time is consumed in trying to find them. To meet this demand, a cabinet about two feet broad, 18 inches high and 13 inches deep has been planned. Drawers with suitable partitions for filing cards, drawers for correspondence, shelves for circulars, and a space for the record book and a compartment for laboratory supplies is provided. The cabinet will be in oak or sheet metal and it is expected that it will be ready about the first of March.

F. M. MEADER, M.D.,

Director Division of Sanitary Supervisors.



## Medical Society of the State of New York

17 West 43d Street, New York.  
March 15, 1915.

The regular annual meeting of the Medical Society of the State of New York will be held on April 27, 1915, at 11 A. M., at the Sixty-fifth Infantry Armory, Buffalo, N. Y.

GROVER W. WENDE, M.D., *President*,  
WISNER R. TOWNSEND, M.D., *Secretary*.

17 West 43d Street, New York.  
March 15, 1915.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York will be held on April 26, 1915, at 8 P. M., at the Hotel Iroquois, Buffalo, N. Y.

GROVER W. WENDE, M.D., *President*,  
WISNER R. TOWNSEND, M.D., *Secretary*.

### 109TH ANNUAL MEETING. TUESDAY, APRIL 27TH.

Sixty-fifth Infantry Armory, 11 A. M.

Calling the Society to order, by Grover W. Wendé, M.D., *President*.

Invocation, by Rabbi Louis J. Kopald.

Address of Welcome, by Albert T. Lytle, M.D., *Chairman Committee on Arrangements*.

Reading of minutes of the last meeting, by Wisner R. Townsend, M.D., *Secretary*.

Address of Welcome, by Hon. Louis P. Furhmann, Mayor of Buffalo; Mr. Herbert A. Meldrum, *President Chamber of Commerce, Buffalo*.

Oration on Medicine, by Prof. Victor C. Vaughan, M.D., LL.D., *Ann Arbor, Mich.*, *President American Medical Association*.

### PRELIMINARY. SCIENTIFIC PROGRAM.

ARRANGED BY THE COMMITTEE ON SCIENTIFIC WORK.

Thomas H. McKee, *Chairman*,  
469 Franklin St., Buffalo.

Franklin W. Barrows, Buffalo.

Thomas J. Harris, New York.

James E. King, Buffalo.

Samuel Lloyd, New York.

Joseph Roby, Rochester.

G. Reese Satterlee, New York.

John A. Fordyce, New York.

#### BY-LAWS, CHAPTER XI.

SECTION 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 consent.

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 House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in the *NEW YORK STATE JOURNAL OF MEDICINE*.

SEC. 3. Any distinguished physician of a foreign country or a physician not 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.

The order of reading papers will be in accordance with the printed program.

Members are requested to write out their discussions and present the same to the Secretary of the Section on or before the close of each session. There will be no official stenographer provided for the sections, and unless the member writes out his remarks they cannot be printed. Pads and pencils will be provided.

All Section Meetings will be held in the Sixty-fifth Infantry Armory.

### SECTION ON MEDICINE.

Chairman, G. Reese Satterlee, M.D., New York.  
Secretary, Nelson G. Russell, M.D., Buffalo.

Tuesday, April 27th, 2 P. M.

#### INFECTION.

"Experience of the Medical Clinic, University of Minnesota, with Mouth Infection as a Source of Systemic Disease," S. Marx White, M.D., Minneapolis (by invitation).

"The Relation of Focal Infection to Ulcer of the Stomach, Cholecystitis and Appendicitis," Edward C. Rosenow, M.D., Chicago (by invitation).

"Pyorrhœa Alveolaris," Francis E. Stewart, M.D., Ph.D., Philadelphia (by invitation).

Discussion by Arthur P. Hitchens, M.D., Glen Olden, Pa., and Joseph Head, M.D., D.D.S., Philadelphia, Pa. (by invitation).

"Lantern Slides Showing the Proper Method of Brushing the Gums," Joseph Head, M.D., D.D.S., Philadelphia, Pa. (by invitation).

"Digitalis, Its Uses and Electrocardiographic Tracings, Showing Its Effects," Robert H. Halsey, M.D., New York.

Wednesday, April 28th, 9.30 A. M.

Joint Meeting with Section on Syphilis.

(For Program see Section on Syphilis.)

Wednesday, April 28th, 2 P. M.

#### BY-LAWS, CHAPTER IX.

SECTION 3. The election of officers of sections shall be the first order of business of the afternoon meeting of the second day of each annual session. 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.

#### METABOLISM.

"Clinical Observations of Mild Cases of Hyperthyroidism," John M. Swan, M.D., Rochester.

"Treatment of Mild Cases of Hyperthyroidism," Harlow Brooks, M.D., New York.

"Metabolic Studies in Diabetes," Frederick Allen, M.D., Rockefeller Institute, New York (by invitation).

"A Case of Acromegaly and Diabetes, Treated by the Animal Extracts," M. May Allen, M.D., Rochester.

"Metabolic Studies in Carbohydrate and Protein Metabolism," John S. Butsch, M.D., and Charles G. Stockton, M.D., Buffalo.

Thursday, April 29th, 9.30 A. M.

Joint Meeting with Section on Surgery.

(For Program see Section on Surgery.)

Thursday, April 29th, 2 P. M.

Joint Meeting with Section on Surgery.

(For Program see Section on Surgery.)

### SECTION ON SURGERY.

Chairman, Samuel Lloyd, M.D., New York.  
Secretary, Harry R. Trick, M.D., Buffalo.

Tuesday, April 27th, 2 P. M.

"Basal-Celled Epithelioma: A Report of 150 Cases," Robert F. Barber, M.D., Brooklyn.

"Removal of Cancer by Radium," Joseph B. Bissell, M.D., New York.

"Cancer of the Bladder," J. Bentley Squier, M.D., New York.

"Cancer of the Breast," Parker Syms, M.D., New York.

"A New Operation for Cancer of the Rectum," Edgar R. McGuire, M.D., Buffalo.

**Wednesday, April 28th, 9.30 A. M.**

"Subacromial Concretions," William W. Plummer, M.D., Buffalo.

"An Investigation of the Source of Intestinal Gas," Marshall Clinton, M.D., Buffalo.

"The Phenomena of Acidosis and Its Denominating Influence in Surgery," George W. Crile, M.D., Cleveland, O. (by invitation).

"Mechanical Respiration Prior to and Subsequent to August, 1887," George E. Fell, M.D., Buffalo.

"Military Surgery," Col. Charles Richard, M.D., U. S. A. (by invitation).

**Wednesday, April 28th, 2 P. M.****BY-LAWS, CHAPTER IX.**

SECTION 3. The election of officers of sections shall be the first order of business of the afternoon meeting of the second day of each annual session. 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.

"Fractures in the Vicinity of Joints, Charles E. Caldwell, M.D., Cincinnati, O. (by invitation).

"The Inlay and Peg Graft Versus the Lane Plate in the Treatment of Fractures," Fred H. Albee, M.D., New York.

"The Standardization of Conditions Affecting Posture," Henry Ling Taylor, M.D., New York.

"Certain Points in the Treatment of Club-Foot," Prescott LeBreton, M.D., Buffalo.

"The Treatment of Rigid Rotary Lateral Curvature of the Spine by a New Brace," Samuel Kleinberg, M.D., New York.

**Thursday, April 29th, 9.30 A. M.****Joint Meeting with Section on Medicine.**

"Intestinal Stasis," Allen A. Jones, M.D., Buffalo.

"Intestinal Prolapse and Adhesions," Henry D. Bettmann, M.D., Cincinnati, O. (by invitation).

"Organic Obstruction of the Ileum as a Cause of Gastric Disorder," Graham Chambers, M.D., Toronto, Can. (by invitation).

"The Surgery of the Colon," Joseph C. Bloodgood, M.D., Baltimore, Md. (by invitation).

"Further Observations Upon the Developmental Reconstruction of the Colon, Based Upon Surgical Physiology," John W. Draper, M.D., and Jerome M. Lynch, M.D., New York.

**Thursday, April 29th, 2 P. M.****Joint Meeting with Section on Medicine.**

"The Role of the Superior Mesenteric Vessels in Abdominal Disease," Josiah N. Hall, M.D., Denver, Col. (by invitation).

"Gastric and Duodenal Ulcer and Their Relation to Cancer," William L. Rodman, M.D., Philadelphia, Pa. (by invitation).

"Why Gastro-enterostomy Fails to Cure," Charles H. Mayo, M.D., Rochester, Minn. (by invitation).

"Early Recognition of Cancer of the Stomach," Julius Friedenwald, M.D., Baltimore, Md. (by invitation).

"Gastropexy," Joseph Burke, M.D., Buffalo.

**SECTION ON OBSTETRICS AND GYNECOLOGY.**

Chairman, James E. King, M.D., Buffalo.

Secretary, James K. Quigley, M.D., Rochester.

**Tuesday, April 27th, 2 P. M.**

"The Midwife Problem in the State," John Van Doren Young, M.D., New York.

"The Position of the New York State Department of Health Relative to the Control of Midwives," Linsly R. Williams, M.D., Albany.

"Bladder Irritations and Diseases in Women," Herbert N. Squier, M.D., Utica.

"Parasitic Tumors of the Uterus," George B. Broad, M.D., Syracuse.

"Bowel Obstruction Following Pelvic Operation," William D. Johnson, M.D., Batavia.

**Wednesday, April 28th, 9.30 A. M.**

"Cæsarian Section for Placenta Prævia," Asa B. Davis, M.D., New York.

"Cæsarian Section in Eclampsia," Reuben Peterson, M.D., Ann Arbor, Mich. (by invitation).

"Cæsarian Section for Contracted Pelves," Barton Cooke Hirst, M.D., Philadelphia, Pa. (by invitation).

"Improvements in Technique of Cæsarian Section," William M. Brown, M.D., Rochester.

**Wednesday, April 28th, 2 P. M.****BY-LAWS, CHAPTER IX.**

SECTION 3. The election of officers of sections shall be the first order of business of the afternoon meeting of the second day of each annual session. 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.

"Medical Treatment of Gynecological Conditions," Ross G. Loop, M.D., Elmira.

"Treatment of Vaginal Discharge," George Chandler, M.D., Kingston.

"Sponges Left in Abdomen," Matthew D. Mann, M.D., Buffalo.

"Secondary Repair of Complete Perineal Lacerations," Charles G. Child, M.D., New York.

"A Case of Hydrocephalus (lantern slides), Alfred W. Armstrong, M.D., Canandaigua.

**Thursday, April 29th, 9.30 A. M.**

"Prophylactic Treatment and Early Diagnosis of Cancer of the Uterus," W. Easterly Ashton, M.D., Philadelphia, Pa. (by invitation).

"Radium Treatment of Uterine Cervix," Curtis F. Burnam, M.D., Baltimore, Md. (by invitation).

"The Technic of Applying Heat in the Treatment of Inoperable Carcinoma of the Cervix," James F. Percy, M.D., Galesburg, Ill. (by invitation).

"The Radical Operation for Cervical Cancer with Report of Forty Cases," John A. Sampson, M.D., Albany.

**Thursday, April 29th, 2 P. M.**

"Twilight Sleep," Abraham J. Rongy, M.D., New York.

"Consideration of Rupture of the Uterus with a Special Regard to Treatment and Report of Cases," Ross McPherson, M.D., New York.

"Treatment of Fibroids by X-ray," George E. Pfahler, M.D., Philadelphia, Pa. (by invitation).

"Tumors of the Female Breast; Their Diagnosis and Surgical Treatment," Paul M. Pilcher, M.D., Brooklyn.

**SECTION ON PEDIATRICS.**

Chairman, Joseph Roby, M.D., Rochester.

Secretary, DeWitt H. Sherman, M.D., Buffalo.

**Tuesday, April 27th, 2 P. M.**

"Pyelitis: Its Clinical Significance," Edward J. Wynkoop, M.D., Syracuse. Discussion opened by Walter Lester Carr, M.D., New York and A. Clifford Mercer, M.D., Syracuse.

"Report of a Case of Brain Tumor in an Infant," George A. Marion, M.D., Rochester. Discussion opened by Edward L. Hanes, M.D., Rochester, and Albert C. Snell, M.D., Rochester.

"A Preliminary Report on the Rollier Treatment for Bone and Gland Tuberculosis," John H. Pryor, M.D., Buffalo. Discussion opened by Clarence L. Hyde, M.D., Perrysburg, and Horace Lo Grasso, M.D., Perrysburg (by invitation).

"Blood Coagulation in Infancy," Henry L. K. Shaw, M.D., Albany. Discussion opened by Philip Van Ingen, M.D., New York.

"Hydrocephalus—Later Experiences in Its Treatment by Cisterna-Sinus Drainage" (author's operation), lantern demonstrations, Irving S. Haynes, M.D., New York. Discussion opened by Godfrey R. Pisek, M.D., New York, and Charles W. Hennington, M.D., Rochester.

**Wednesday, April 28th, 9.30 A. M.**

"The Remote Effects of Bad Feeding," Frank van der Bogert, M.D., Schenectady. Discussion opened by Henry L. K. Shaw, M.D., Albany, and Rudolph D. Moffett, M.D., New York.

"Treatment of Disturbances of Digestion in Infancy," John Lovett Morse, M.D., Boston, Mass. (by invitation). Discussion opened by Irving M. Snow, M.D., Buffalo, and Douglas P. Arnold, M.D., Buffalo.

"Experiences with Malt Soup for Institution Marasmus," Thomas S. Southworth, M.D., New York. Discussion opened by Jerome S. Leopold, M.D., New York, and Norris G. Orchard, M.D., Rochester.

"Recent Observations in the Use of Soy Bean in Infant Feeding," John F. Sinclair, M.D., Philadelphia, Pa. (by invitation). Discussion opened by Carl G. Leo-Wolf, M.D., Buffalo, and Linnaeus E. La Fétra, M.D., New York.

"Fruits and Nuts: Their Value in the Diet of Children," George Dow Scott, M.D., New York. Discussion opened by Godfrey Roger Pisek, M.D., New York.

**Wednesday, April 28th, 2 P. M.**

**BY-LAWS, CHAPTER IX.**

SECTION 3. The election of officers of sections shall be the first order of business of the afternoon meeting of the second day of each annual session. 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.

(a) "The Schick Reaction and Its Practical Application," (b) "The Treatment of Scarlet Fever with Convalescent Blood," Abraham Zingher, M.D., New York (by invitation). Discussion opened by George W. Goler, M.D., Rochester (by invitation).

"Results of the Schick Test at the Rochester Orphan Asylum," Stearns S. Bullen, M.D., Rochester. Discussion opened by William Shannon, M.D., New York, and Albert D. Kaiser, M.D., Rochester.

"Immunization Against Measles," Charles Herrman, M.D., New York. Discussion opened by Jerome S. Leopold, M.D., New York.

"Syphilis as a Cause of Feeble-mindedness," Henry H. Goddard, M.D., Vineland, N. J. (by invitation). Discussion opened by Herman J. Matzinger, M.D., Buffalo, and William T. Shanahan, M.D., Sonyea.

**Thursday, April 29th, 9.30 A. M.**

**Joint Meeting with Section on Syphilis.  
(For Program see Section on Syphilis.)**

**Thursday, April 29th, 2 P. M.**

Trip to: The Franklin School, The Park School, The Fresh Air School.

The State Institute for the Study of Malignant Disease—Gratwick Laboratory and Research Hospital will be opened for inspection by members of the Medical Society of the State of New York and guests from 9 to 12 A. M., and from 2 to 4.30 P. M., Thursday, April 29th. As space is limited admission will be by ticket only, which can be secured at the information booth.

**SECTION ON EYE, EAR, NOSE AND THROAT.**

Chairman, Thomas J. Harris, M.D., New York.  
Secretary, Lee M. Francis, M.D., Buffalo.

**Tuesday, April 27th, 2 P. M.**

"The Active Immunization of Hay Fever," Seymour Oppenheimer, M.D., and Mark J. Gottlieb, M.D., New York. Discussion by George F. Cott, M.D., Buffalo; Sargent F. Snow, M.D., Syracuse; Robert A. Cooke, M.D., New York.

"Teeth in Their Relation to General Medicine," William Henry Haskin, M.D., New York. Discussion by W. Sohler Bryant, M.D., New York.

"Fibroma of the Naso-Pharynx," Walter S. Daly, M.D., Ogdensburg. Discussion by Hubert Arrowsmith, M.D., Brooklyn.

"The Tonsil in Its Relation to Rheumatism and Other Infectious Diseases," Thomas H. Halsted, M.D., Syracuse. Discussion by Thomas H. Farrell, M.D., Utica; A. P. Voislowsky, M.D., New York; Eugene E. Hinman, M.D., Albany; Stephen H. Lutz, M.D., Brooklyn.

**Wednesday, April 28th, 9.30 A. M.**

**SYMPOSIUM ON DEAF CHILDREN.**

"Treatment of the Deaf Child from the Standpoint of the Physician," John F. Fairbairn, M.D., Buffalo.

"Treatment of the Deaf Child from the Standpoint of the Educator," John D. Wright, Ph.D. (by invitation).

"The Blind Child," F. Park Lewis, M.D., Buffalo. Discussion by James F. McKernon, M.D., New York; James F. McCaw, M.D., Watertown.

"The Importance of the Early Care of the Larynx in Pulmonary Tuberculosis," James E. McCambridge, M.D., Poughkeepsie. Discussion by Wolff Freudenthal, M.D., New York; Julius Dworetzky, M.D., Otisville (by invitation).

**Wednesday, April 28th, 2 P. M.**

**BY-LAWS, CHAPTER IX.**

SECTION 3. The election of officers of sections shall be the first order of business of the afternoon meeting of the second day of each annual session. 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.

"Panas' Modified Tenotomy, the Best Surgical Treatment of Convergent, Concomitant Squint; a Brief Analysis of 830 Cases," Edward S. Peck, M.D., New York. Discussion by Lucien Howe, M.D., Buffalo; Francis Valk, M.D., New York.

"Eye Lesions in One Hundred Patients with General Tuberculosis," Arthur J. Bedell, M.D., Albany.

"The Present Status of Tuberculi, or Therapy in Ocular Tuberculosis," Walter Baer Weidler, M.D., New York.

"The Determination of the Relative Position of Rest, by Prolonged Occlusion of One Eye," Frank W. Marlow, M.D., Syracuse.

"Ependymitis, with Report of a Case," Albert C. Snell, M.D., and Joseph Roby, M.D., Rochester.

"Important Eye Diseases and Their Early Treatment," John S. Kirkendall, M.D., Ithaca.

**Thursday, April 29th, 9.30 A. M.**

"Correction of Nasal Deformities of Sub-Cutaneous and Elastic Methods" (lantern slide illustrations), John O. Roe, M.D., Rochester.

"Implantation of Plates of Vulcanite in the Nasal Septum Following Sub-mucous Operation and Correction of Saddle Back Deformities" (lantern slide illustrations), Alexander C. Howe, M.D., Brooklyn. Discussion by William W. Carter, M.D., New York; R. Johnson Held, M.D., New York.

"The Treatment of Acute Respiratory Infections by Menthol Oil Drops—Preliminary Report," Irving W. Voorhees, M.D., New York. Discussion by J. Henry Guntzer, M.D., New York.

"Some Methods Useful in Direct Laryngoscopy," Charles Johnstone Imperatori, M.D., New York. Discussion by Henry H. Forbes, M.D., Sidney Yankauer, M.D., and John McCoy, M.D., New York.

"Presentation of Roentgenograms Illustrating Various Rhinolarngological Conditions," W. Scott Renner, MD., Buffalo. Discussion by Lee M. Francis, M.D., Buffalo, and Edgar A. Forsyth, M.D., Buffalo; Frederick M. Law, M.D., New York.

"Studies of the Sphenoid Sinus, with a New Method of Roentgen Ray Examination," Herman Jarecky, M.D., New York, and Arthur S. Unger, M.D., New York (by invitation).

**Thursday, April 29th, 2 P. M.**

**Joint Meeting with Section on Syphilis.  
(For Program see Section on Syphilis.)**

**SECTION ON SYPHILIS.**

Chairman, John A. Fordyce, M.D., New York.  
Secretary, Lesser Kauffman, M.D., Buffalo.

**Tuesday, April 27th, 2 P. M.**

**GENERAL CONSIDERATION OF SYPHILIS.**

"Etiology and Bacteriology," Hans Zinsser, M.D., New York (by invitation).

"General Pathology," Chairman's Address, John A. Fordyce, M.D., New York.

"General Diagnostic Methods, Including X-ray," Abner Post, M.D., Boston, Mass. (by invitation).

"The Methods of Teaching Syphilis," William T. Corlett, M.D., Cleveland, O. (by invitation).

"Skin Manifestations," George H. Fox, M.D., New York.

"Special Diagnostic Methods: (a) Serology; (b) Luetin Test," M. A. Reasoner, M.D., Capt. Med. Corps, U. S. Army (by invitation).

Discussion on papers by Drs. Fordyce, Corlett, Fox and Post, Sigmund Pollitzer, M.D., New York; E. Wood Ruggles, M.D., Rochester.

On papers by Drs. Zinsser and Reasoner, William G. Bissell, M.D., Buffalo; A. A. Thibaudeau, M.D., Buffalo (by invitation).

**Wednesday, April 28th, 9.30 A. M.**

**Joint Meeting with Section on Medicine.**

**MEDICAL SYPHILIS.**

"Blood Vessel Changes in Syphilis," Alexander McPhedran, M.D., Toronto, Ont. (by invitation).

"Cardiac Manifestations," Harlow Brooks, M.D., New York.

"Prognosis in Cardio-vascular Syphilis," Henry L. Elsner, M.D., Syracuse.

"Gastro-Intestinal Manifestations," Henry C. Buswell, M.D., Buffalo.

"Syphilis in Relation to Public Health," Archibald McNeil, M.D., New York (by invitation).

Discussion "Cardio-vascular Syphilis," on papers by Drs. McPhedran, Brooks and Elsner, De Lancey Rochester, M.D., Buffalo; Maurice Packard, M.D., New York.

"Gastro-Intestinal Manifestations," on paper by Dr. Buswell, Allen A. Jones, M.D., Buffalo.

**Wednesday, April 28th, 2 P. M.**

**SYMPOSIUM. SYPHILIS OF THE NERVOUS SYSTEM.**

"Cerebral Manifestations," Bernard Sachs, M.D., New York.

"Spinal Manifestations," M. Allen Starr, M.D., New York.

"The Mental Phases of Syphilis," August Hoch, M.D., New York (by invitation).

"The Spinal Fluid in Syphilis," Sydney R. Miller, M.D., Baltimore, Md. (by invitation).

Discussion "Nervous Phases," on papers by Drs. Sachs and Starr, James W. Putnam, M.D., Buffalo.

"Mental Phases," on paper by Dr. Hoch, Arthur W. Hurd, M.D., Buffalo; Richard H. Hutchings, M.D., Ogdensburg.

"Spinal Fluid," on paper by Dr. Miller, Hanson S. Ogilvie, M.D., New York.

**Thursday, April 29th, 9.30 A. M.**

**Joint Meeting with Section on Pediatrics.**

**HEREDITARY LUES.**

"Hereditary Syphilis: The Early Manifestations, Starting from Intra-uterine Life Up To One Year of Age," Le Grand Kerr, M.D., Brooklyn.

"Hereditary Syphilis: Later Manifestations from One Year Up, Including Teeth, Bones, Eyes, etc.," Linneaus E. La Fétra, M.D., New York.

"X-ray Bone Manifestations in Hereditary and Acquired Syphilis," Wisner R. Townsend, M.D., New York.

Discussion on papers by Drs. Kerr and La Fétra, Charles Bernstein, M.D., Rome.

**Thursday, April 29th, 2 P. M.**

**Joint Meeting with Section on Eye, Ear, Nose and Throat.**

**SYPHILIS OF THE SPECIAL SENSES.**

"Aural Manifestations," Samuel J. Kopetzky, M.D., New York.

"Nasal and Laryngeal Manifestations," Emil Mayer, M.D., New York.

**TREATMENT OF SYPHILIS.**

"Treatment in Primary Stage," Edward L. Keyes, Jr., M.D., New York.

"Treatment in Secondary Stage," Sigmund Pollitzer, M.D., New York.

"Treatment in Tertiary Stage," James McF. Winfield, M.D., Brooklyn.

"Intraspinal Method in the Treatment of Syphilis of the Nervous System," Homer F. Swift, M.D., New York.

Discussion "Treatment on Papers," by Drs. Keyes, Pollitzer and Winfield; Abner Post, M.D., Boston, Mass. (by invitation), George H. Fox, M.D., New York.

"Intraspinal Method," on paper by Dr. Swift, George Draper, M.D., New York.

**PUBLIC LECTURES.**

IN CONNECTION WITH THE 109TH ANNUAL MEETING.

**Monday Evening, April 26th.**

Charles J. Hastings, M.D., Medical Officer of Health, Toronto, Ontario. Subject: "What are we doing to improve our race?"

**Tuesday Afternoon, April 27th.**

Julia C. Lathrop, Chief of Children's Bureau, U. S. Department of Labor, Washington, D. C. Subject: "Why the Children's Bureau studies infant mortality."

**Tuesday Evening, April 27th.**

J. W. Schereschewsky, M.D., Surgeon, Public Health Service, Washington, D. C. Subject: "The relation of heat to the summer mortality of infants."

**Wednesday Afternoon, April 28th.**

Henry H. Goddard, Ph.D., Director, Department of Research, The Training School, Vineland, N. J. Subject: "The sub-normal child: Who is he and what must be done for him?" Illustrated.

**Wednesday Evening, April 28th.**

Thomas Darlington, M.D., American Iron & Steel Institute, New York. Subject: "Welfare work in industry." Illustrated.

**Thursday Afternoon, April 29th.**

Edward M. Van Cleve, Managing Director, National Committee for the Prevention of Blindness, New York. Subject: "Saving sight and saving citizens." Illustrated.

**Thursday Evening, April 29th.**

George S. Barrows, Philadelphia, representing the Illuminating Engineering Society. Subject: "Right and wrong methods of interior illumination." Illustrated.

**RAILROAD RATES.**

The lines in this territory on January 1, 1914, discontinued the granting of reduced rates, so that no special reduction in fares can be secured by those attending the Annual Meeting.

Members are advised to consult with local ticket agents and purchase either mileage books or round-trip tickets.

**SCIENTIFIC AND COMMERCIAL EXHIBITS.**

The Exhibition Hall will be located in the Armory on the same floor with the Bureau of Registration and Information. It will be open from 9.00 A. M. to 10 P. M., on Monday, Tuesday and Wednesday; Thursday, from 9 A. M. until 6 P. M.

**ANNUAL BANQUET.**

The annual banquet will be held on Wednesday evening, April 28th, at the Hotel Statler.

AMENDMENTS TO THE CONSTITUTION AND  
BY-LAWS.

WHICH WILL BE PRESENTED FOR ACTION AT THE NEXT  
ANNUAL MEETING.

Amend Article III of Constitution, Section 1, by adding after the word Secretary, the words "also an Assistant Secretary," and after the word, Treasurer, "also an Assistant Treasurer."

Amend Article V by adding after the word Society in the second line, the words, "except the Assistant Secretary and the Assistant Treasurer."

Amend the By-Laws by adding to Chapter VI, a section 3a to read as follows:

"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."

And add to Chapter VI, a section 4a to read as follows:

"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."

RESOLUTIONS ADOPTED BY THE MEDICAL  
SOCIETY OF THE COUNTY OF KINGS.

At the regular meeting of the Medical Society held in Brooklyn, on February 16, 1915, the following resolutions were unanimously passed:

WHEREAS, It is a scientific fact that vaccination by bovine lymph is sure protection against smallpox, and whereas in recognition of this fact legislation making vaccination compulsory was enacted in Bavaria in 1807, in Denmark in 1810, Sweden in 1814, Wurtemberg, Hesse and other German States in 1818, Prussia in 1835, the United Kingdom in 1853, German Empire in 1874, Roumania in 1874, Hungary in 1876, Servia in 1881, Austria in 1886, and that vaccination against smallpox has become the usual practice in France, Italy, Spain, Portugal, Belgium, Russia, Turkey and in many states within our own borders, Massachusetts making it compulsory as early as 1809 and New York in 1893; and,

WHEREAS, A Bill known as the Tallett-Jones bill has been introduced into the Legislature of the State of New York; and,

WHEREAS, The passage of this bill would nullify the present law governing the vaccination of children about to enter our schools, thus creating in our state, within a few years, the majority an unvaccinated population; and,

WHEREAS, This bill provides for the vaccination of school children only in the event of the actual presence of smallpox in the community; and,

WHEREAS, The dangerous period of incubation of smallpox and the period necessary for the incubation of cowpox are thus completely disregarded; and,

WHEREAS, On February 10, 1915, the Department of Health of the State of New York through its Commissioner, Dr. Hermann Biggs, appeared before a joint committee of the Senate and Assembly and spoke in support of the bill; therefore be it,

*Resolved*, That the Medical Society of the County of Kings declares itself not in accord with the position here taken by the Department of Health of the State of New York; and be it further,

*Resolved*, That the Medical Society of the County of Kings declares itself unalterably opposed to the Tallett-Jones bill, or any bill which will, in any manner or degree, lessen the protection by vaccination against smallpox, provided by the existing law.

Correspondence

New York City, February 22, 1915.

DR. JOHN COWELL MACEVITT,

*Editor*, NEW YORK STATE JOURNAL OF MEDICINE.

In your editorial "The General Practitioner" in the February, 1915, issue of your journal, you express proper solicitude for the position of the general practitioner. You also point the way in which he can hope in a measure, to retain at least, a valued place in the minds of his patients, and also, of his colleagues. So far as you have written, I am with you in wish and sympathy.

I trust a few additional remarks may be timely and useful.

The great difficulty in my judgment, today, is that the public are not informed as they should be where their most important interests lie. These are not, as I believe, in the hands of the specialist, but far more, and always will be, in those of the all-round qualified practitioner. He it is, who has the broad vision, the sane, well-balanced judgment, which should be the final call of appeal in every case.

It would never occur to me, to abide by the decision of any specialist, no matter how prominent he might be, without the controlling voice finally, of the general surgeon, or the internist, who has won his spurs by wide experience and training, in the observation of disease in its numerous aspects. His diagnosis is most to be relied upon; his treatment is surest and most efficacious, in the vast majority of cases. It is quite unnecessary for such an one to be able to make chemical, or X-ray examinations, in diseases of the stomach, it is equally non-essential to have him dabble with cystoscopy, or local applications after sight, to the posterior urethra, to get rid of the last drop, result of gonorrhæal infection. He should know simply, what can and may be done, and control all contestants for exaggerated fame and profit.

To him, the general practitioner, as always the best guardian of individual and family health and well being, should still come the high honors formerly awarded him, in the absolute loyalty, affection, and confidence of his patients.

Let him in addition in this age of lucre and self-seeking, have his fair compensation in money, for the great services rendered by him not infrequently. If he were still listened to, as he should be, there would be fewer neurasthenics, chronic invalids, self-centered children of so-called prosperity, and many surgical operations would never be performed because the need of them would not exist.

I differ with you in the belief that people of moderate means at present, secure the least valuable medical advice, as compared with the rich, or the poor. On the contrary, they fortunately, are often intelligent enough to know that their well-tried doctor is still their mainstay and in him, they have abiding faith and despite all the foolishness which is now rampant.

BEVERLEY ROBINSON, M.D.

## Report of Committee on Legislation

The Committee on Legislation, as directed by the Council, begs to inform the profession that it entered a vigorous protest against the enactment into law of the Tallett Bill, No. 125, Assembly, entitled an "Act to amend the Public Health Law in relation to Vaccination."\*

The hearing was held before a joint meeting of the Committee on Public Health of the Senate, Mr. Whitney, Chairman, and the Committee on Public Health of the Assembly, Mr. Seelye, Chairman.

The principal speaker for the bill was the Commissioner of Health of the State Department of Health, Dr. Hermann M. Biggs. (See page 89.)

Assistant Commissioner of Education, Dr. T. E. Finnegan, favored the bill because the Board of Education could not compel the school children to be vaccinated when the local school boards refused to have it done. Other advocates of the bill were Mr. Loyster who was much interested in opposing vaccination as now practised, others were representatives of anti-vaccination leagues and societies.

Those opposing the bill were for the State Society, Dr. Neff, Chairman of the Committee on Legislation; Dr. Jay F. Schamberg, of Philadelphia, a member of the Pennsylvania State Vaccination Commission (see page 92); Dr. W. E. Cruikshank, of Brooklyn, representing the Medical Society of the County of Kings; Dr. A. Jacobi, of New York, representing the Medical Society of the County of New York (see page 90); Dr. F. C. Gram, representing the Commissioner of Health of Buffalo and the Medical Society of the County of Erie, Dr. Rooney, of Albany, member of the Committee on Legislation, and Dr. Wisner R. Townsend, Secretary of the Medical Society of the State of New York.

Mr. E. J. McGoldrich, of New York City, Assistant Corporation Counsel of the City of New York, entered a protest against the bill and favored the exclusion of cities of the first and second class from the bill.

The bill has been amended, reprinted and recommitted to the Committee on Public Health, reported, and is now at third reading.

The profession is also asked by the Council and the Committee on Legislation to oppose Senate bills No. 733, Int. No. 675, Assembly No. 613, Int. 591, and Assembly 927, Int. 863; also all anti-vivisection bills and new anti-vaccination bills as all of these are objectionable. The Committee takes great pleasure in presenting the following remarks of Mr. Harold J.

Hinman, representative from Albany County, on the Christian Science bill.

Mr. Chairman:—I have been asked to give my reasons for opposing the Thorn bill, which is on our calendar for final passage for about Tuesday and which legalizes the practice of Christian Science healing.

My reasons are two: First, the protection of public health; second, the safe guarding of children. It is common experience that the welfare of the public health depends entirely upon administrative health officers being thoroughly informed and completely aware of the presence of infectious or contagious diseases within the state, that the proper means may be taken to control these diseases in their beginning so that epidemics may not arise from the undetected sources.

The powers of the state health department depend entirely for their efficiency, upon a well educated and well trained body of physicians, thoroughly schooled in diagnosis, which is the science of the detection of disease. It is perfectly apparent that if the character of a disease is not ascertained, it may prove to be an infectious or contagious one and give rise to a large number of other cases. This is common knowledge to mankind.

The Christian Scientists deny the existence of disease and denying its existing, they are of course incapable of differentiating between diseases; having, in fact no knowledge of this art, they treat tuberculosis, typhoid fever, diphtheria, scarlet fever, Bright's disease, heart disease and all other diseases in exactly the same manner. Mrs. Eddy's own book, the basis of their belief, requires them to abstain from all knowledge of hygiene and states that there are no diseases of the human body at all and the supposed infection or contagion of a disease is a figment of the imagination. This denial is not proof. Medical scientists all over the world have proven, if anything can be proven, that infectious and contagious diseases are caused by a germ and that a disease due to any certain germ is constant in character and that this holds true not alone of human beings but also of all animals. The only thing the State asks of anybody practising medicine is that they have a minimum educational requirement showing their capability of diagnosing disease. It does not limit their kind of treatment to any special means. If the Christian Scientists wish to practise medicine, and the legal decisions of many courts in the different states hold that the practice of Christian Science belief is the practise of medicine, let them take the medical examinations and become licensed under the laws of the state as they at present exist, then, practice as they choose.

No matter how we feel concerning adults who submit themselves to treatment by Christian Scientists willingly, there can be no question but that some protection is due children who are incapable of making wise choice for themselves. In fact the state is, in every way, today, endeavoring to lessen the death rate among children and infants and is jealously safeguarding their health by supervisions of their homes, schools, food, working places and hours of employment. The state is spending thousands of dollars each year to lessen the death rate among children.

Diphtheria is a very common disease among children, and as is well known, was until within the past fifteen or twenty years a very fatal one and is still, if not treated properly. It is perfectly apparent to every man that the discovery of antitoxin has lessened the death rate of diphtheria by over seventy-five per cent, and it is also certain that even this remedy, to be efficacious must be administered early in the disease and this means that the disease must be recognized early. There have been many instances in many states where children under the treatment of Christian Scientists have not alone died, but have become the starting points of epidemics because of the lack of regard for the health laws.

In the State of New York it is required that the parent be obliged to provide the necessities of life which have been held to include medical treatment, for his

\* For bill see February issue, NEW YORK STATE JOURNAL OF MEDICINE, p. 78.

minor children. There has been one conviction in this state, that of Pierson, the father of a child that died of diphtheria under the treatment of a Christian Scientist, for not providing proper medical attendance. There are many other reasons that might be alleged, but these two, it seems to me, are the essential ones.

So far as the religious question is concerned, the Christian Scientist is no more discriminated against than Catholic, Protestant, Jew or Gentile.

HAROLD J. HINMAN.

STATE OF NEW YORK.

No. 733.—Int. 675.

IN SENATE.

Introduced by Mr. Whitney and referred to the Committee on Public Health.

AN ACT.

To amend the public health law, relating to the practice of medicine.

*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

Section 1. Section one hundred and sixty of chapter forty-nine of the laws of nineteen hundred and nine, entitled "An act in relation to the public health, constituting chapter forty-five of the consolidated laws," is hereby amended by adding thereto a new subdivision, to be subdivision nine, to read as follows:

9. "*Unprofessional conduct*" means and shall include the following acts or conduct by or on the part of a practitioner of medicine:

(a) *Advertising his services or remedies in any manner previously challenged, either as to form or substance, by the state board of medical examiners, and disapproved of by the subsequent unanimous vote of the regents present and voting at any meeting of their board held after at least thirty days' notice, to the offending party, of such challenge and of opportunity to be heard in opposition thereto; or continuing in the employment of any person, firm, association or corporation whose advertising has been similarly reprobated; or makes a practice of writing letters or causing them to be written, or of sending out circulars, or employing a capper, solicitor, or drummer, to secure patients.*

(b) *Wilfully betraying a professional secret.*

(c) *Habitual drunkenness or addiction to drugs.*

(d) *Dividing or promising to divide a fee with another physician, or accepting a divided fee, without the knowledge of the patient or the person paying such fee.*

Sec. 2. Subdivisions three and five of section one hundred and sixty-six of such chapter, as amended by chapter one hundred and forty-one of the laws of nineteen hundred and twelve, are hereby amended to read as follows:

3. Had prior to beginning the [second] *first* year of medical study the general education required by the rules of the regents preliminary to receiving the degree of bachelor or doctor of medicine in this state.

5. Has ever received the degree of bachelor or doctor of medicine from some registered medical school, or a diploma or license conferring full right to practice medicine in some foreign country unless admitted conditionally to the examinations as specified above, in which case all qualifications, including the full period of study, the medical degree and the final examinations in surgery, obstetrics, gynecology, pathology, including bacteriology, and diagnosis must be met. The degree of bachelor or doctor of medicine shall not be conferred in this state before the candidate has filed with the institution conferring it the certificate of the regents that before beginning the first annual medical course counted toward the degree, unless [matriculated conditionally as hereinafter specified,] he [had either graduated from a registered college or satisfactorily completed a full course in a registered academy or

high school; or had a preliminary education considered and accepted by the regents as fully equivalent; or held a regents' medical student certificate; or passed regents' examinations securing sixty academic counts, as provided in the rules of the regents, or their full equivalent, before beginning the first annual medical course counted toward the degree, unless admitted conditionally as hereinafter specified. A medical school may matriculate conditionally a student deficient in not more than one year's academic work or fifteen counts of the preliminary education requirement, provided the name and deficiency of each student so matriculated be filed at the regents' office within three months after matriculation, and that the deficiency be made up before the student begins the second annual medical course counted toward the degree; provided, however, that on and after the taking effect of this act, medical schools shall not matriculate conditionally students who are deficient in any part of the preliminary educational requirements specified in the subdivision.] *had earned a medical student qualifying certificate in accordance with the rules of the regents, the minimum requirement being the successful completion of an approved four year high school course or its equivalent.*

Sec. 3. Section one hundred and sixty-nine of such chapter is hereby amended to read as follows:

Sec. 169. Licenses. On receiving from the state board and official report that an applicant has successfully passed the examinations and is recommended for license, the regents shall issue to him a license to practice according to the qualifications of the applicant. Every license shall be issued by the university under seal and shall be signed by each acting medical examiner and by the officer of the university who approved the credential which admitted the candidate to examination, and shall state that the licensee has given satisfactory evidence of fitness as to age, character, preliminary and medical education and all other matters required by law, and that after full examination he has been found properly qualified to practice. *Provided, however, that, if they shall think further inquiry desirable, the regents may withhold therefor any such license; and they may revoke and cancel the same if, before its actual delivery to the licensee, information shall be received showing that he is not properly entitled thereto or which, if the license had been delivered, would justify its revocation.* Applicants examined and licensed by other state examining boards registered by the regents as maintaining standards not lower than those provided by this article and applicants who matriculated in a New York medical school before June fifth, eighteen hundred and ninety, and who received the degree of doctor of medicine from a registered medical school before August first, eighteen hundred and ninety-five, may without further examination, on payment of twenty-five dollars to the regents and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas conferring all rights and privileges of a regents' license issued after examination. The commissioner of education may in his discretion on the approval of the board of regents indorse a license or diploma of a physician from another state, provided the applicant has met all the preliminary and professional qualifications required for earning a license on examination in this state, has been in reputable practice for a period of ten years, and has reached a position of conceded eminence and authority in his profession. If any person, whose registration is not legal because of some error, misunderstanding or unintentional omission, shall submit satisfactory proof that he had all requirements prescribed by law at the time of his imperfect registration and was entitled to be legally registered, he may on unanimous recommendation of the state board of medical examiners receive from the regents under seal a certificate of the facts which may be registered by any county clerk and shall make valid the previous imperfect registration. Before any license is issued it shall be numbered and recorded in a book kept in the regents' office, and its number

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

shall be noted in the license; and a photograph of the licensee filed with the records. This record shall be open to public inspection, and in all legal proceedings shall have the same weight as evidence that is given to a record of conveyance of land.

Sec. 4. Section one hundred and seventy of such chapter is hereby amended to read as follows:

Sec. 170. Registry; revocation of license; annulment of registry. Every license to practice medicine shall, before the licensee begins practice thereunder, be registered in a book kept in the clerk's office of the county where such practice is to be carried on, with the name, residence, place and date of birth, and source, number and date of his license to practice. Before registering, each licensee shall file, to be kept in a bound volume in a county clerk's office, an affidavit of the above facts, and also that he is the person named in such license, and had, before receiving the same, complied with all requirements as to attendance, terms and amount of study and examinations required by law and the rules of the university as preliminary to the conferment thereof; that no money was paid for such license, except the regular fees paid by all applicants therefor; that no fraud, misrepresentation or mistake in any material regard was employed by any one or occurred in order that such license should be conferred. Every license, or if lost, a copy thereof legally certified so as to be admissible as evidence, or a duly attested transcript of the record of its conferment, shall, before registering, be exhibited to the county clerk, who, only in case it was issued or indorsed as a license under seal by the regents, shall indorse or stamp on it the date and his name preceded by the words, "registered as authority to practice medicine in the clerk's office of.....county." The clerk shall thereupon give to every physician so registered a transcript of the entries in the register with a certificate, under seal that he has filed the prescribed affidavit. The licensee shall pay to the county clerk a total fee of one dollar for registration, affidavit and certificate. The regents shall have power at any and all times to inquire into the identity of any person claiming to be a licensed or registered physician and after due service of notice in writing, require him to make reasonable proof, satisfactory to them, that he is the person licensed to practice medicine under the license by virtue of which he claims the privilege of this article. When the regents find that a person claiming to be a physician, licensed under this article, is not in fact the person to whom the license was issued, they shall reduce their findings to writing and file them in the office of the clerk of the county in which said person resides or practices medicine. Said certificate shall be prima facie evidence that the person mentioned therein is falsely impersonating a practitioner or a former practitioner of a like or different name. The regents may revoke the license of a practitioner of medicine, or annul his registration, or do both, or suspend a practitioner of medicine from the practice of his profession for any length of time, in any of the following cases:

(a) A practitioner of medicine who is guilty of any fraud or deceit in his practice, or who is guilty of a crime or misdemeanor, or who is guilty of any fraud or deceit by which he was admitted to practice; or

(b) Is an habitual drunkard or habitually addicted to the use of morphine, opium, cocaine, or other drugs having a similar effect; or

(c) Who undertakes or engages in any manner or by any ways or means whatsoever, to procure or perform any criminal abortion as the same is defined by section eighty of the penal law; or

(d) Who offers or undertakes by any manner or means to violate any of the provisions of section eleven hundred and forty-two of the penal law; or

(e) Who is guilty of unprofessional conduct, as defined in this article; or

(f) Who has been adjudged to be insane by a court, or other tribunal of competent jurisdiction, and has

been committed to an institution for the care of the insane.

Proceedings for the revocation of a license or the annulment of registration shall be begun by filing a written charge or charges against the accused. These charges may be preferred by any person or corporation, or the regents may on their own motion direct the executive officer of the board of regents to prefer said charges. Said charges shall be filed with the executive officer of the board of regents, and a copy thereof with the secretary of the board of medical examiners. The board of medical examiners, when charges are preferred, shall designate three of their number as a committee to hear and determine said charges. A time and place for the hearing of said charges shall be fixed by said committee as soon as convenient, and a copy of the charges, together with a notice of the time and place when they will be heard and determined, shall be served upon the accused or his counsel, at least ten days before the date actually fixed for said hearing. Where personal service or service upon counsel can not be effected, and such fact is certified on oath by any person duly authorized to make legal service, the regents shall cause to be published for at least seven times, for at least twenty days prior to the hearing, in two daily papers in the county in which the physician was last known to practice, a notice to the effect that a definite time and place of hearing will be had for the purpose of hearing charges against the physician upon an application to revoke his license. *Service upon persons confined in penal institutions shall be made in the same manner as service of process in civil proceedings is required to be made.* At said hearing the accused shall have the right to cross-examine the witnesses against him and to produce witnesses in his defense, and to appear personally or by counsel. The said committee shall make a written report of its findings and recommendations, to be signed by all its members, and the same shall be forthwith transmitted to the executive office of the board of regents. If the said committee shall unanimously find that said charges, or any of them, are sustained, and shall unanimously recommended that the license of the accused be revoked or his registration be annulled, the regents may thereupon in their discretion without further hearing, revoke said license or annul said registration, or do both or suspend such practitioner of medicine from the practice of medicine for any length of time. If the regents shall annul such registration, they shall forthwith transmit to the clerk of the county or counties in which said accused is registered as a physician, a certificate under their seal certifying that such registration has been annulled or that such practitioner has been suspended from practicing and said clerk shall, upon receipt of said certificate, file the same and forthwith mark said registration "annulled [,]" or "suspended from practice," as the case may be. Any person who shall practice medicine after his registration has been marked "annulled" or "suspended from practice" shall be deemed to have practiced medicine without registration. Where the license of any person has been revoked, or his registration has been annulled or he has been suspended from practice as herein provided, the regents may, after the expiration of one year, entertain an application for a new license [,] or for reinstatement in like manner as original applications for licenses are entertained; and upon such new application, they may in their discretion, exempt the applicant from the necessity of undergoing any examination.

Sec. 5. Section one hundred and seventy-four of such chapter is hereby amended to read as follows:

Sec. 174. Penalties and their collection. Any person who, not being then lawfully authorized to practice medicine within this state and so registered according to law, shall practice medicine within this state without lawful registration or in violation of any provision of this article; and any person who shall buy, sell or fraudulently obtain any medical diploma, license, record, or registration, or who shall aid or abet such buying,



s. lling, or fraudulently obtaining, or who shall practice medicine under cover of any medical diploma, license, record or registration illegally obtained, or signed, or issued unlawfully or under fraudulent representations, or mistake of fact in a material record, or who, after conviction of a felony, shall attempt to practice medicine, or shall so practice, and any person who shall in connection with his name use any designation tending to imply or designate him as a practitioner of medicine within the meaning of this article without having registered in accordance therewith, [or any person who shall practice medicine or advertise to practice medicine under a name other than his own.] or any person not a registered physician, who shall advertise to practice medicine, shall be guilty of a misdemeanor. Any person who shall practice medicine under a false or assumed name, or who shall falsely personate another practitioner or former practitioner of a like or different name, shall be guilty of a felony.

*If, at the option of the attorney general, who shall conduct all prosecutions hereunder, any person who shall violate any of the provisions of this article shall not be proceeded against criminally, such person shall forfeit to the state two hundred and fifty dollars for the first offense and five hundred dollars for each subsequent offense. All fines imposed or forfeitures incurred hereunder may be sued for and collected by the attorney general, and the amounts thereof recovered or received in any way shall have the same disposition directed in section one hundred and sixty-four for the fines derived from the operation of this article.*

[When any prosecution under this article, or under sections eighty, eighty-one, eighty-two, eleven hundred and forty-two, seventeen hundred and forty-seven, of the penal law, and amendments thereto, is made on the complaint of any incorporated medical society of the state, or any county medical society entitled to representation in a state society, any fines collected shall be paid to the society making the complaint, and any excess of the amount of fines so paid over the expense incurred by the said society in enforcing the medical laws of this state, shall be paid at the end of the year to the county treasurer.]

Sec. 6. This act shall take effect immediately.

No. 613.—Int. 591.

IN ASSEMBLY.

February 8, 1915.

Introduced by Mr. N. J. Miller, read once, and referred to the Committee on Public Health.

AN ACT.

To amend the public health law, and to license the practice of mechano-therapy, and to provide for a board of examiners of mechano-therapy.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Definition. As used in this article:

1. "University" means University of the State of New York.

2. "Regents" means board of regents of the University of the State of New York.

3. "Board" means a board of examiners of mechano-therapy of the state of New York.

4. "Examiners" means a member of the board of examiners of mechano-therapy of the state of New York.

5. "Mechano-Therapy" means the treatment of disease mechanically and without the use of drugs.

Sec. 2. No person shall practice mechano-therapy unless licensed and registered as required by this article; nor shall any person practice mechano-therapy who has ever been convicted of a felony by any court, or whose authority to practice is suspended or revoked by the regents on recommendation of the state board.

Sec. 3. The state board of mechano-therapy examiners is hereby created to consist of five members who shall be appointed by the regents. The members of the first board shall be appointed for one, two, three, four and five years respectively and shall consist of

persons of full age, residents of the state of New York, holding diplomas or degrees from legally incorporated schools or colleges of mechano-therapy, having practiced in this state for two years or more. After the appointment of the first board, members shall be appointed from the list of regularly licensed and registered mechano-therapists and shall hold office for a term of five years and until their successors shall be appointed. The regents shall fill any vacancies, however occurring, during the term of any members thereof.

Sec. 4. Every examiner shall receive a certificate of appointment from the regents and, before beginning his term of office, shall file with the secretary of state his constitutional oath of office. The board, or any committee thereof, may take testimony and proofs concerning any matter within its jurisdiction. It shall elect proper officers and may, subject to the regents' approval, make all by-laws and rules, not inconsistent with law, needed in performing its duties.

Sec. 5. From the fees provided by this article, the board may pay all proper expenses incurred by its provisions, except compensation to the examiners. Any surplus which may remain thereafter shall at the end of each year be divided equally among its members until each member thereof shall receive the sum of one thousand dollars per year after which, the balance, if any, of such fees shall be paid into the state treasury.

Sec. 6. The board shall admit to examination any candidate who, not later than ten days before the date set for such examination, pays the fee of twenty-five dollars and submits to it satisfactory evidence, verified by oath, if required, that he or she,

1. Is more than twenty-one years of age;

2. Is of good moral character, as evidenced by the affidavit of two residents of the county in which said applicant resides;

3. Has resided in New York state at least one year prior thereto;

4. And has passed regents' examinations aggregating at least sixty-two points.

Sec. 7. Every member of the board shall submit to the regents, as required, lists of suitable questions for thorough examination in such subjects as they deem proper, to include anatomy, hydro-therapy, physiological chemistry, diagnosis, sanitation, physiology, pathology, toxicology, histology, hygiene, dietetics, and theory and practice of mechano-therapy. From these lists, the regents shall prepare question papers for all these subjects which, at any examination, shall be the same for all candidates.

Sec. 8. Examinations for license shall be held at least two times annually, and oftener in the discretion of the regents, and at such places as they shall direct, and shall be exclusively in writing and in English. Each examination shall be conducted by a regents examiner who shall not be a member of the mechano-therapy board of examiners. At the close of each examination, the regents examiner in charge shall deliver the question and answer papers to the board, or its duly authorized committee, and such board shall, without unnecessary delay, examine and mark the papers and transmit to the regents an official report, signed by its president and secretary, stating the standing of each candidate in each branch, his general average, and whether it recommends that a license be granted. Such report shall include the questions and answers and be filed in the public records of the university. If a candidate fails in his examination he may, after not less than six months' further study, have a second examination without fee.

Sec. 9. On receiving from the state board an official report that the candidate has successfully passed the examination, and is recommended for license, the regents shall issue to him a license to practice mechano-therapy. Each license shall be issued by the university under seal and shall be signed by each acting member of the board of mechano-therapy examiners, and shall be numbered, and shall state that the licensee has given satisfactory evidence of fitness as to age, moral

character, education and other matters required by law, and that, after full examination, he or she has been licensed to practice.

Sec. 10. Any person of full age, and who is of good moral character, as evidenced by affidavit of two reputable residents of the county in which he resides and who, for at least two years prior to the passage of this act, has held a diploma from a legally incorporated school or college of mechano-therapy, may, within three months after this article goes into effect, without examination, and upon payment of the sum of twenty-five dollars to the board, and upon such further evidence as the board may require, receive from the board a certificate, which, when presented to the regents, shall entitle such person to a license to practise mechano-therapy as though such examination had been tried and successfully passed and been certified to the regents.

Sec. 11. Every license to practice mechano-therapy shall, before the licensee begins practice thereunder, be registered in a book to be known as the mechano-therapy register, which shall be provided and kept in the office of the clerk of the county where such practice is to be carried on, with name, residence, place and date of birth, source, number and date of license. Before registering, each licensee shall file, to be kept in a bound volume in the county clerk's office, an affidavit of the above facts, and that he is a person named in such license, and had, before receiving the same, complied with all requirements of law and rules of the university in connection with the conferment thereof, and no money was paid for such license except the regular fees, paid by all applicants thereof; that no fraud, misrepresentation or mistake in any material regard was employed by anyone or incurred in order that such license might be conferred. Every member, or, if lost, a certified copy thereof, shall, before registering, be exhibited to the county clerk who, in case it is under seal by the regents, shall indorse or stamp thereon the date and his name preceded by the words "registered as authority to practice mechano-therapy, in the clerk's office of ..... county." The clerk shall thereupon give to every mechano-therapist so registered a transcript of the entries in the register, with a certificate under seal that he has filed the prescribed affidavit. The licensee shall pay the county clerk a total fee of one dollar.

Sec. 12. If any practitioner of mechano-therapy be charged under oath before the board, with unprofessional or immoral conduct, or with gross ignorance, or inefficiency in his profession, the board shall notify him to appear before it at an appointed time and place, with counsel, if he so desires, to answer said charges, furnishing to him a copy thereof. Upon the report of the board that the accused has been guilty of unprofessional or immoral conduct, or that he is grossly ignorant or inefficient in his profession, the regents may suspend the person so charged from the practice of mechano-therapy for a limited season, or may revoke his license. Upon the revocation of any license, the fact shall be noted upon the records of the regents and the license shall be marked as cancelled of the date of its revocation. Upon presentation of a certificate of such cancellation to the clerk of any county wherein the license may be registered, said clerk shall note the date of the cancellation on the register of mechano-therapists and cancel the registration. A conviction of felony shall forfeit a license to practice mechano-therapy, and upon presentation to the regents or a county clerk by any public officer or officer of mechano-therapy society of a certified copy of a court record showing that a practitioner of mechano-therapy has been convicted of felony, that fact shall be noted on the record of license and clerk's register, and the license and registration shall be marked "cancelled." Any person who, after conviction of felony, shall practice mechano-therapy in this state, shall be subject to all penalties prescribed for the unlicensed practice of mechano-therapy, providing that if such conviction be subsequently reversed upon

appeal and the accused acquitted or discharged, his license shall become again operative from the date of such acquittal or discharge.

Sec. 13. Every duly licensed and registered mechano-therapist shall be entitled to the degree "M. T. D.," doctor of mechano-therapy, and shall at all times have posted and exposed, in a conspicuous place in his or her office, his or her license and certificate of registration.

Sec. 14. A practicing mechano-therapist having registered a lawful authority to practise in one county, and removing such practice or conducting an office in another county, shall show, or send by registered mail, to the clerk of such other county, his certificate of registration. The clerk of such other county shall thereupon register the applicant in the latter county, on payment of a fee of one dollar therefor, and shall stamp or indorse upon such certificate the date and his name, preceded by the words, "registered also in ..... county," and return the certificate to the applicant.

Sec. 15. This article shall not be construed to affect doctors of medicine, osteopaths, or others legally entitled to practice their particular profession or business, Turkish baths, their managers and operators, or persons giving gratuitous services in cases of emergency, or any mechano-therapist practicing in one county and duly registered therein and called to attend isolated cases in another county, but not residing or habitually practising therein.

Sec. 16. Every person who shall practise mechano-therapy within this state without lawful registration or in violation of the provisions of this act, shall forfeit to the county wherein such person shall so practise, or in which any violation is committed, fifty dollars for every such violation, and for every day of such unlawful practice, and any legally incorporated society of mechano-therapists may bring an action in the name of such county for the collection of such penalties, and the expense incurred by such society in such prosecution, including necessary counsel fees, may be retained by such society out of the penalties so collected, and the balance shall be paid into the county treasury. Any person who shall practice mechano-therapy under a false or different name shall be guilty of a felony; and any person guilty of violating any of the other provisions of this article, or who shall buy, sell or fraudulently obtain any mechano-therapy diploma, license, record or registration, or who shall aid, abet or knowingly assist in such buying, selling or fraudulently obtaining, or who shall practise mechano-therapy under the cover of a diploma or license illegally obtained, or signed or issued unlawfully under fraudulent misrepresentation, or who, after conviction of a felony, shall attempt to practise mechano-therapy, and any person obtained, or signed or issued unlawfully under fraudulent misrepresentation or advertise that he is a lawful practitioner of mechano-therapy, shall be guilty of a misdemeanor, and on conviction thereof, shall be punished by a fine of not less than two hundred and fifty dollars or imprisonment of six months for the first offense, and on conviction of a subsequent offense, by a fine of not less than five hundred dollars or imprisonment for not less than a year, or both fine and imprisonment.

No. 927.—Int. 863.

IN ASSEMBLY.

February 18, 1915.

Introduced by Mr. Thorn, read once, and referred to the Committee on the Judiciary.

AN ACT.

To amend the public health law, in relation to the construction of provisions affecting the practice of medicine.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section one hundred and seventy-three of chapter forty-nine of the laws of nineteen hundred and nine, entitled "An act in relation to the public health,

constituting chapter forty-five of the consolidated laws," is hereby amended to read as follows:

Sec. 173. Construction of this article. This article shall not be construed to affect commissioned medical officers serving in the United States army, navy or marine hospital service, while so commissioned; or any one while actually serving without salary or professional fees on the resident medical staff of any legally incorporated hospital; or any legally registered dentist exclusively engaged in practicing dentistry; or any person or manufacturer who mechanically fits or sells lenses, artificial eyes, limbs or other apparatus or appliances, or is engaged in the mechanical examination of eyes, for the purpose of constructing or adjusting spectacles, eye glasses and lenses; or any lawfully qualified physician in other states or countries meeting legally registered physicians in this state in consultation; or any physician residing on a border of a neighboring state and duly licensed under the laws thereof to practice medicine therein, whose practice extends into this state, and who does not open an office or appoint a place to meet patients or receive calls within this state; or any physician duly registered in one county called to attend isolated cases in another county, but not residing or habitually practicing therein; or the furnishing of medical assistance in case of emergency; or the domestic administration of family remedies; or the practice of chiropody; or the practice of *Christian Science for the prevention or cure of disease*; or the practice of the religious tenets of any church. This article shall be construed to repeal all acts or parts of acts authorizing conferment of any degree in medicine *causa honoris* or *ad eundem* or otherwise than on students duly graduated after satisfactory completion of a preliminary medical course not less than that required by this article as a condition of license. It is further provided that any person who shall be actively engaged in the practice of osteopathy in the state of New York on the thirteenth day of May, nineteen hundred and seven, and who shall present to the board of regents satisfactory evidence that he is a graduate in good standing of a regularly conducted school or colleges of osteopathy within the United States which at the time of his or her graduation required a course of study of two years or longer, including the subjects of anatomy, physiology, pathology, hygiene, chemistry, obstetrics, diagnosis and the theory and practice of osteopathy, with actual attendance of not less than twenty months, which facts shall be shown by his or her diploma and affidavit, shall upon application and payment of ten dollars be granted, without examination, a license to practise osteopathy, provided application for such license be made within six months after the thirteenth day of May, nineteen hundred and seven. A license to practise osteopathy shall not permit the holder thereof to administer drugs or perform surgery with the use of instruments. Licenses to practise osteopathy shall be registered in accordance with the provisions of this article, and the word osteopath be included in such registration; and such license shall entitle the holder thereof to the use of the degree D. O., or doctor of osteopathy.

Sec. 2. This act shall take effect immediately.

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

BILLS INTRODUCED INTO THE LEGISLATURE.  
IN SENATE.

January 22 to February 19, 1915.

Adding new subdivision 3 to section 624, Education Law, by providing that a parent shall not be required under the Compulsory Education Law to send a child to school in case the child must be vaccinated. By Mr. Thompson. To Public Education Committee. Printed No. 196. Int. 196.

Amending the Greater New York Charter, section 692, subdivision 6, by substituting new provisions relative to the medical boards of Bellevue and allied hospitals. It provides, that the medical board of these hospitals shall be composed of attending physicians and surgeons of the hospitals, vacancies in the medical

board of Bellevue to be filled by the trustees upon nomination or successive nominations by the trustees of universities whose medical departments have representation in the hospitals. (Same as A. 493.) By Mr. Simpson. To Cities Committee. February 17th. Reported amended to Committee of the Whole. Printed Nos. 277, 674. Int. 273.

Adding new section 175, to Public Health Law, providing that a physician attending upon, or prescribing for, a person suffering from accident or assault, shall have a lien upon any action or demand arising out of the accident or assault for the agreed or reasonable value of his services, upon written notice to the injured's attorney. By Mr. Gilchrist. To Public Health Committee. February 9th. Changed to Judiciary Committee. Printed No. 291. Int. 287.

Adding a new subdivision 4 to section 235, Public Health Law, prohibiting any person, firm, association or corporation who advertises to sell any medicine direct to the user, by mail or express, from furnishing or delivering such medicine except upon a written order or prescription of a duly licensed physician where the advertisement leads the public to believe that it is furnished upon advice of a physician. A physician may be employed for this purpose but no charge therefor shall be made to the purchaser of the medicine. By Mr. Horton. To Public Health Committee. Printed No. 324. Int. 320.

Repealing and adding new title 4, amending sections 1179, 1203, 1238 and adding new section 1585-a, Greater New York Charter, and repealing sections 1766 to 1779, New York City Consolidation Act, by abolishing the office of coroners and transferring their duties and powers to a chief medical examiner for the city, to be appointed by the mayor. The medical examiner is to appoint necessary deputies, assistant medical examiners and employees. Powers conferred on coroners under chapter 2, Code of Civil Procedure, are transferred to the county clerk. By Mr. Cromwell. To Cities Committee. Printed Nos. 397 and 1016. Int. 388.

Amending section 245 and 246, Public Health Law, and repealing section 247, by providing that the prohibition of these sections against the sale of habit-forming drugs shall not apply to preparations compounded from physicians' prescriptions containing not more than the quantities of drugs specified in section 245. By Mr. Whitney. To Public Health Committee. Printed No. 721. Int. 664.

IN ASSEMBLY.

Amending sections 12, 18, 20, Workmen's Compensation Law, by reducing from 14 to 7 days the period after disability during which no compensation is allowed, except the benefits provided in section 13, and the period after which claim may be filed with the commission. It reduces from 10 to 5 days after disability time within which notice of injury must be filed. (Same as A. 263.) By Mr. Ryan. To Judiciary Committee. Printed No. 321. Int. 319.

Amending the Greater New York Charter, section 692, subdivision 6, by substituting new provisions relative to the medical boards of Bellevue and allied hospitals. It provides among other things, that the medical boards of these hospitals shall be composed of attending physicians and surgeons of the hospitals, vacancies in the medical board of Bellevue to be filled by the trustees upon nomination or successive nominations by the trustees of universities whose medical departments have representation in the hospitals. (Same as S. 273.) By Mr. Conkling. To Cities Committee. Printed No. 503. Int. 493.

Amending sections 20 and 25, Workmen's Compensation Law, and adding new section 19-a, providing for the determination of claims by agreement between the employer or insurance carrier and the injured workman or his dependents, such agreement to be approved by the state commission; permitting payment of awards directly by insurance carrier to claimant and appropriating \$425,000 for the commission, of which not more than \$14,000 shall be used monthly for the state fund. By Mr. Macdonald. To Ways and Means Committee. Printed No. 533. Int. 523.

INTERNAL REVENUE REGULATION No. 35.  
LAW AND REGULATIONS

## RELATING TO THE

Production, Importation, Manufacture, Compounding, Sale, Dispensing, or Giving Away of Opium or Coca Leaves, their Salts, Derivatives, or Preparations.

## THE LAW.

By an act of Congress approved December 17, 1914, it is provided:

That on and after the first day of March, nineteen hundred and fifteen, every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away opium or coca leaves or any compound, manufacture, salt, derivative, or preparation thereof, shall register with the collector of internal revenue of the district his name or style, place of business, and place or places where such business is to be carried on: *Provided*, That the office, or if none, then the residence of any person shall be considered for the purpose of this Act to be his place of business. At the time of such registry and on or before the first day of July, annually thereafter, every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away any of the aforesaid drugs shall pay to the said collector a special tax at the rate of \$1 per annum: *Provided*, That no employee of any person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away any of the aforesaid drugs, acting within the scope of his employment, shall be required to register or to pay the special tax provided by this section: *Provided further*, That the person who employs him shall have registered and paid the special tax as required by this section: *Provided further*, That officers of the United States Government who are lawfully engaged in making purchases of the above-named drugs for the various departments of the Army and Navy, the Public Health Service, and for Government hospitals and prisons, and officers of any State government, or of any county or municipality therein, who are lawfully engaged in making purchases of the above-named drugs for State, county, or municipal hospitals or prisons, and officials of any Territory or insular possession or the District of Columbia or of the United States who are lawfully engaged in making purchases of the above-named drugs for hospitals or prisons therein shall not be required to register and pay the special tax as herein required.

It shall be unlawful for any person required to register under the terms of this Act to produce, import, manufacture, compound, deal in, dispense, sell, distribute, or give away any of the aforesaid drugs without having registered and paid the special tax provided for in this section.

That the word "person" as used in this Act shall be construed to mean and include a partnership, association, company, or corporation, as well as a natural person; and all provisions of existing law relating to special taxes, so far as applicable, including the provisions of section thirty-two hundred and forty of the Revised Statutes of the United States are hereby extended to the special tax herein imposed.

That the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall make all needful rules and regulations for carrying the provisions of this Act into effect.

Sec. 2. That it shall be unlawful for any person to sell, barter, exchange, or give away any of the aforesaid drugs except in pursuance of a written order of the person to whom such article is sold, bartered, exchanged, or given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue. Every person who shall accept any such order, and in pursuance thereof shall sell, barter, exchange, or give away any of the aforesaid drugs, shall preserve such order for a period of two years in such a way as to be readily accessible to inspection by any officer, agent,

or employee of the Treasury Department duly authorized for that purpose, and the State, Territorial, District, municipal, and insular officials named in section five of this Act. Every person who shall give an order as herein provided to any other person for any of the aforesaid drugs shall, at or before the time of giving such order, make or cause to be made a duplicate thereof on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue, and in case of the acceptance of such order, shall preserve such duplicate for said period of two years in such a way as to be readily accessible to inspection by the officers, agents, employees, and officials hereinbefore mentioned. Nothing contained in this section shall apply—

(a) To the dispensing or distribution of any of the aforesaid drugs to a patient by a physician, dentist, or veterinary surgeon registered under this Act in the course of his professional practice only: *Provided*, That such physician, dentist, or veterinary surgeon shall keep a record of all such drugs dispensed or distributed, showing the amount dispensed or distributed, the date, and the name and address of the patient to whom such drugs are dispensed or distributed, except such as may be dispensed or distributed to a patient upon whom such physician, dentist or veterinary surgeon shall personally attend; and such record shall be kept for a period of two years from the date of dispensing or distributing such drugs, subject to inspection, as provided in this Act.

(b) To the sale, dispensing, or distribution of any of the aforesaid drugs by a dealer to a consumer under and in pursuance of a written prescription issued by a physician, dentist, or veterinary surgeon registered under this Act: *Provided, however*, That such prescription shall be dated as of the day on which signed and shall be signed by the physician, dentist, or veterinary surgeon who shall have issued the same: *And provided further*, That such dealer shall preserve such prescription for a period of two years from the day on which such prescription is filled in such a way as to be readily accessible to inspection by the officers, agents, employees, and officials hereinbefore mentioned.

(c) To the sale, exportation, shipment or delivery of any of the aforesaid drugs by any person within the United States or any Territory or the District of Columbia or any of the insular possessions of the United States to any person in any foreign country, regulating their entry in accordance with such regulations for importation thereof into such foreign country as are prescribed by said country, such regulations to be promulgated from time to time by the Secretary of State of the United States.

(d) To the sale, barter, exchange, or giving away of any of the aforesaid drugs to any officer of the United States Government or of any State, territorial, district, county, or municipal or insular government lawfully engaged in making purchases thereof for the various departments of the Army and Navy, the Public Health Service, and for Government, State, territorial district, county, or municipal or insular hospitals or prisons.

The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall cause suitable forms to be prepared for the purposes above mentioned, and shall cause the same to be distributed to collectors of internal revenue for sale by them to those persons who shall have registered and paid the special tax as required by section one of this Act in their districts, respectively; and no collector shall sell any of such forms to any persons other than a person who has registered and paid the special tax as required by section one of this Act in his district. The price at which such forms shall be sold by said collectors shall be fixed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, but shall not exceed the sum of \$1 per hundred. Every collector shall keep an account of the number of such

forms sold by him, the names of the purchasers, and the number of such forms sold to each of such purchasers. Whenever any collector shall sell any of such forms, he shall cause the name of the purchaser thereof to be plainly written or stamped thereon before delivering the same; and no person other than such purchaser shall use any of said forms bearing the name of such purchaser for the purpose of procuring any of the aforesaid drugs, or furnish any of the forms bearing the name of such purchaser to any person with intent thereby to procure the shipment or delivery of any of the aforesaid drugs. It shall be unlawful for any person to obtain by means of said order forms any of the aforesaid drugs for any purpose other than the use, sale, or distribution thereof by him in the conduct of a lawful business in said drugs or in the legitimate practice of his profession.

The provisions of this Act shall apply to the United States, the District of Columbia, the Territory of Alaska, the Territory of Hawaii, the insular possessions of the United States, and the Canal Zone. In Porto Rico and the Philippine Islands the administration of this Act, the collection of the said special tax, and the issuance of the order forms specified in section two shall be performed by the appropriate internal-revenue officers of those governments, and all revenues collected hereunder in Porto Rico and the Philippine Islands shall accrue intact to the general governments thereof, respectively. The courts of first instance in the Philippine Islands shall possess and exercise jurisdiction in all cases arising under this Act in said islands. The President is authorized and directed to issue such Executive orders as will carry into effect in the Canal Zone the intent and purpose of this Act by providing for the registration and the imposition of a special tax upon all persons in the Canal Zone who produce, import, compound, deal in, dispense, sell, distribute, or give away opium or coca leaves, their salts, derivatives, or preparations.

Sec. 3. That any person who shall be registered in any internal-revenue district under the provisions of section one of this Act shall, whenever required so to do by the collector of the district, render to the said collector a true and correct statement or return, verified by affidavit, setting forth the quantity of the aforesaid drugs received by him in said internal-revenue district during such period immediately preceding the demand of the collector, not exceeding three months, as the said collector may fix and determine; the names of the persons from whom the said drugs were received; the quantity in each instance received from each of such persons, and the date when received.

Sec. 4 That it shall be unlawful for any person who shall not have registered and paid the special tax as required by section one of this Act to send, ship, carry, or deliver any of the aforesaid drugs from any State or Territory or the District of Columbia, or any insular possession of the United States, to any person in any other State or Territory or the District of Columbia or any insular possession of the United States: *Provided*, That nothing contained in this section shall apply to common carriers engaged in transporting the aforesaid drugs, or to any employee acting within the scope of his employment, of any person who shall have registered and paid the special tax as required by section one of this Act, or to any person who shall deliver any such drug which has been prescribed or dispensed by a physician, dentist, or veterinarian required to register under the terms of this Act, who has been employed to prescribe for the particular patient receiving such drug, or to any United States, State, county, municipal, District, Territorial, or insular officer or official acting within the scope of his official duties.

Sec. 5. That the duplicate-order forms and the prescriptions required to be preserved under the provisions of section two of this Act, and the statements or returns filed in the office of the collector of the district, under the provisions of section three of this Act, shall

be open to inspection by officers, agents, and employees of the Treasury Department duly authorized for that purpose; and such officials of any State or Territory, or of any organized municipality therein, or of the District of Columbia, or any insular possession of the United States, as shall be charged with the enforcement of any law or municipal ordinance regulating the sale, prescribing, dispensing, dealing in, or distribution of the aforesaid drugs. Each collector of internal revenue is hereby authorized to furnish, upon written request, certified copies of any of the said statements or returns filed in his office to any of such officials of any State or Territory or organized municipality therein, or the District of Columbia, or any insular possession of the United States, as shall be entitled to inspect the said statements or returns filed in the office of the said collector, upon the payment of a fee of \$1 for each one hundred words or fraction thereof in the copy or copies so requested. Any person who shall disclose the information contained in the said statements or returns or in the said duplicate-order forms, except as herein expressly provided, and except for the purpose of enforcing the provisions of this Act, or for the purpose of enforcing any law of any State or Territory or the District of Columbia, or any insular possession of the United States, or ordinance of any organized municipality therein, regulating the sale, prescribing, dispensing, dealing in, or distribution of the aforesaid drugs, shall, on conviction, be fined or imprisoned as provided by section nine of this Act. And collectors of internal revenue are hereby authorized to furnish upon written request, to any person, a certified copy of the names of any or all persons who may be listed in their respective collection districts as special-tax payers under the provisions of this Act, upon payment of a fee of \$1 for each one hundred names or fraction thereof in the copy so requested.

Sec. 6. That the provisions of this Act shall not be construed to apply to the sale, distribution, giving away, dispensing, or possession of preparations and remedies which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of codeine, or any salt or derivative of any of them in one fluid ounce, or, if a solid or semisolid preparation, in one avoirdupois ounce; or to liniments, ointments, or other preparations which are prepared for external use only, except liniments, ointments, and other preparations which contain cocaine or any of its salts or alpha or beta eucaine or any of their salts or any synthetic substitute for them: *Provided*, That such remedies and preparations are sold, distributed, given away, dispensed, or possessed as medicines and not for the purpose of evading the intentions and provisions of this Act. The provisions of this Act shall not apply to decocainized coca leaves or preparations made therefrom, or to other preparations of coca leaves which do not contain cocaine.

Sec. 7. That all laws relating to the assessment, collection, remission, and refund of internal-revenue taxes, including section thirty-two hundred and twenty-nine of the Revised Statutes of the United States, so far as applicable to and not inconsistent with the provisions of this Act, are hereby extended and made applicable to the special taxes imposed by this Act.

Sec. 8. That it shall be unlawful for any person not registered under the provisions of this Act, and who has not paid the special tax provided for by this Act, to have in his possession or under his control any of the aforesaid drugs; and such possession or control shall be presumptive evidence of a violation of this section, and also of a violation of the provisions of section one of this Act: *Provided*, That this section shall not apply to any employee of a registered person, or to a nurse under the supervision of a physician, dentist, or veterinary surgeon registered under this Act, having such possession or control by virtue of his

employment or occupation and not on his own account; or to the possession of any of the aforesaid drugs which has or have been prescribed in good faith by a physician, dentist, or veterinary surgeon registered under this Act; or to any United States, State, county, municipal, District, Territorial, or insular officer or official who has possession of any said drugs, by reason of his official duties, or to a warehouseman holding possession for a person registered and who has paid the taxes under this Act; or to common carriers engaged in transporting such drugs: *Provided further*, That it shall not be necessary to negative any of the aforesaid exemptions in any complaint, information, indictment, or other writ or proceeding laid or brought under this Act; and the burden of proof of any such exemption shall be upon the defendant.

SEC. 9. That any person who violates or fails to comply with any of the requirements of this Act shall, on conviction, be fined not more than \$2,000 or be imprisoned not more than five years, or both, in the discretion of the court.

SEC. 10. That the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, is authorized to appoint such agents, deputy collectors, inspectors, chemists, assistant chemists, clerks, and messengers in the field and in the Bureau of Internal Revenue in the District of Columbia as may be necessary to enforce the provisions of this Act.

SEC. 11. That the sum of \$150,000, or so much thereof as may be necessary, be, and hereby is, appropriated, out of any moneys in the Treasury not otherwise appropriated for the purpose of carrying into effect the provisions of this Act.

SEC. 12. That nothing contained in this Act shall be construed to impair, alter, amend, or repeal any of the provisions of the Act of Congress approved June thirtieth, nineteen hundred and six, entitled "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded, or poisonous, or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," and any amendment thereof, or of the Act approved February ninth, nineteen hundred and nine, entitled "An Act to prohibit the importation and use of opium for other than medicinal purposes," and any amendment thereof.

REGULATIONS.

Under the authority conferred by section 1 of the above-quoted act, the following regulations are issued:

REGISTRY AND PAYMENT OF SPECIAL TAX.

ARTICLE 1. As required by section 1 of said act, every person, partnership, association, company, or corporation therein described, and not specifically exempt, must, on or before the *first day of March, 1915*, register with the collector of the district, and must at the time of such registry, and on or before the first day of July in each year thereafter, pay to such collector a special tax at the rate of \$1 per annum.<sup>1</sup>

If the applicant (other than a physician, dentist, or veterinarian) has more than one place of business, or if, in any case, the applicant is engaged in more than one profession or business where any of the drugs above described are made, stored, or dispensed, a separate application for registry must be made, and a special tax must be paid, in each such case.

ART. 2. Application for registry, and for the necessary special tax stamps will be in the following form:<sup>2</sup> blanks of which form should be obtained from the collector of the district.<sup>3</sup>

<sup>1</sup>The special tax imposed for the period March 1, 1915, to June 30, 1915 (the close of the special tax year), will be 34 cents. Remittances for special taxes should be made in currency, money order, or certified check on a National or State bank.

<sup>2</sup>For convenience, and to conform to other requirements of law relating to special taxes, made applicable by this act, the application for registry and special tax stamps is here combined.

FORM 678.—OPIUM, ETC.

APPLICATION FOR REGISTRY, AND FOR SPECIAL TAX STAMP.

(Act of Congress approved Dec. 17, 1914.)

Registry No. .... } Location.  
Name or style of Applicant... } State of.....  
..... } County of.....  
..... } Town or city of....  
..... } Street and No.....

TO COLLECTOR OF INTERNAL REVENUE,  
... District of .....

SIR: The undersigned, under the above name or style, and at the place above designated, is now engaged, or intends to engage in the.....

.....

Pursuant to an act of Congress, approved December 17, 1914, application is hereby made for registration under said act, and for a special tax stamp for the special tax year ending June 30, 191....

By.....

(In case of a firm, or corporation, to be signed by the principal member or officer.)

Subscribed and sworn to before me this ..... day of.....191....

[SEAL.].....

ART. 3. Applications in the form above prescribed when received by collectors, will be given a registry number, commencing with No. 1 in each district for the first application, and continuing in serial order as subsequent applications are filed. The registry number thus given each original application will be a permanent registry number for all renewal applications, and will be entered on all blank orders (art. 8) issued to the applicant.

All applications for registry will, on payment of the special tax imposed, be recorded alphabetically by classes in special record 10A., to be provided for that purpose.

SPECIAL TAX STAMPS.

ART. 4. Appropriate coupon stamps, denoting payment of the special tax under the act named, will be furnished collectors on requisition, and will be charged to them and accounted for as in the case of other special tax stamps.

SALE AND DISPOSAL OF DRUGS.

ART. 5. Where any of the drugs referred to in section 1 of the act are to be sold or otherwise disposed of, the purchaser or receiver (unless specifically exempt under section 2 of the act) will, prior to such purchase or receipt, issue his order therefor and in the form prescribed in article 8 of these regulations.

ART. 6. Blanks of such order forms will be printed on distinctive paper and will be issued in tablets or books or 10 blanks each, and a charge for such blanks (including original and duplicate) will be made at the rate of \$1 per hundred, as authorized by section 2 of the act, and will be so accounted for by collectors to whom the same are furnished.

Such blank orders must in all cases be procured from the collector of the district by persons using the same, but no requisition therefor will be accepted by collectors unless made by persons who have duly registered (art. 2) and who have paid the special tax as required by law; and, in such cases, only where the collector is satisfied that such blanks will be used for no unlawful purpose.

<sup>3</sup>Here state business, or occupation or profession, as the "practice of medicine," or the "practice of dentistry," or "practice of veterinary medicine and surgery," or the "importation and sale of drugs coming under the operation of the act," or the "manufacture and sale of drugs coming under the operation of the act," or the "sale and distribution at retail of drugs coming under the operation of the act." If intended for analytical laboratory or hospital, so state.

In addition to the special record 10A., provided for in article 3, collectors will keep a record or account of the number of such order forms sold by them, the name of each purchaser, and the number sold to each, as required by section 2 of said act.

ART. 7. Requisitions for such blanks will be in the following form; and, in filling such requisitions, the collector will cause the registry number and name of the applicant to be stamped on each blank issued by him. Adjustable name and numbering stamps will be supplied collectors for this purpose.

FORM 679.—OPIUM, 593.

Registry No. ....<sup>5</sup>

REQUISITION FOR BLANK ORDERS.

(Act of Congress, approved Dec. 17, 1914.)

To COLLECTOR OF INTERNAL REVENUE, .....  
..... District of..... 191....

SIR: Requisition is hereby made for<sup>6</sup> ..... blank order-forms, to be used solely in connection with the business, or for the purpose, set forth in my (or our) application for registry, filed in your office pursuant to an act of Congress, approved December 17, 1914.

.....  
.....  
(In case of a firm or company, to be also signed by a member, or principal officer.)

ART. 8. Upon receipt of such requisitions by collectors the same will be compared with the application for registry, if filed, before the blank orders called for are issued.

Such blank orders will be in the following form:

..... District of..... }  
Registry No. .... } (<sup>7</sup>)

ORDER FOR OPIUM, ETC.

(Act of Congress, approved Dec. 17, 1914.)

To.....

Please ship goods by ....., as follows:

Specific description of articles.<sup>8</sup> Quantity. (<sup>9</sup>)

ART. 9. The above order must be prepared in duplicate, the duplicate of which will be retained by the maker. If accepted, the law requires all such orders (both original and duplicate) to be retained on file for a period of two years, and in such a way as to be readily accessible to the inspecting officers. Persons accepting such orders, therefore, will file the same in their numerical order, i. e., according to their registry numbers as to each collection district.

DISPENSING OF DRUGS BY PHYSICIANS, DENTISTS, OR VETERINARY SURGEONS.

ART. 10. Under the exempting provisions of section 2 of the act, no written order is required for the dispensing or distribution of any of the aforesaid drugs to a patient by a physician, dentist, or veterinary surgeon, registered under this act, in the course of his professional practice only." A record, however, is required to be kept of all such drugs so dispensed or distributed (except such as may be dispensed or distributed to a patient, upon whom such physician, dentist, or veterinary surgeon shall personally attend—i. e., personally visit) and must show:

<sup>5</sup> The registry number must in all cases be filled in by the applicant.

<sup>6</sup> The number to be here stated will be 10 or a multiple of 10.

<sup>7</sup> To be filled in by collector.

<sup>8</sup> Here give trade name of drugs.

<sup>9</sup> This space to be reserved for use of the person filling the order, for any purpose desired by him.

<sup>10</sup> Here give full name, business or profession, with full address.

1. The date when any such drug is dispensed or distributed;

2. The kind and quantity dispensed or distributed in each case; and

3. The name and residence of the patient to whom such drug was dispensed or distributed. [For form of prescriptions, see Art. 12.]

The record so kept must be preserved for a period of two years from the date of dispensing or distributing, and will be subject to inspection as provided in section 5 of the act. Each physician, dentist, and veterinary surgeon must supply himself with a suitable blank book for such record.

DRUGS DISPENSED UNDER PRESCRIPTION.

ART. 11. A like exemption to that above noted is made as to drugs dispensed or distributed under and in pursuance of a written prescription issued by a physician, dentist, or veterinary surgeon, duly registered under this act. But all such prescriptions covering such drugs, not specifically exempt by section 6 of the act, must be dated and signed as of the day when issued; must be preserved for a period of two years from the time when filled, and must be readily accessible to the inspecting officers above referred to.

A separate file of all such prescriptions should therefore be kept by each druggist or apothecary filling the same, but such prescriptions may be numbered consecutively with other prescriptions received. Unless so filed a record must be kept showing:

1. The file number given to each prescription filled;

2. The name of the physician or surgeon signing the same; and

3. The name of the person for whom such prescription is filled.

Druggists must furnish their own record books for this purpose.

ART. 12. Under the authority conferred by section 1 of the act named, for the issuing of regulations necessary for carrying the provisions of the act into effect, physicians and surgeons writing any such prescriptions are hereby required to sign their name in full to the same, to state therein their registry number and the location of their office, and the name and address of the person for whom such prescriptions are written. Druggists and apothecaries must refuse to fill any such prescription unless signed as herein required; nor must prescriptions for such drugs be filled by any druggist or apothecary, if he has reason to suspect that it was fraudulently issued or obtained.

The dispensing of such drugs by druggists or apothecaries, except on physician's original prescriptions, or on original orders issued to persons who have duly registered, will be in violation of the act. Refiling of prescriptions or orders is therefore prohibited.

INVENTORIES.

ART. 13. Every person, firm, or company dispensing directly to consumers any of the drugs herein referred to will, on the 1st day of March, 1915, prepare and keep on file an inventory of all such drugs (other than preparations or remedies specially exempt under the provisions of section 6 of the act) on hand at that date. No special form of inventory is here required, but the inventory made must fully and clearly set forth the quantity of each kind of such drugs, preparations or remedies so held, and must be verified by oath not later than the 5th day of March, 1915.

SWORN STATEMENTS.

ART. 14. Section 3 of the act provides:

That any person who shall register in any internal-revenue district under the provisions of section 1 of this act shall, whenever required to do so by the collector of the district, render to the said collector a true and correct statement or return, verified by affidavit, setting forth the quantity of the aforesaid drugs received by him in said internal-revenue district during such period immediately preceding the demand of the collector, not

exceeding three months, as the said collector may fix and determine \* \* \*

Under the authority thus granted collectors will require such sworn statements in all cases where, from the number of order blanks obtained by any person, or from the character of the business carried on, he has reason to suspect that any of the drugs referred to are being procured, compounded, or disposed of by such person for illegal purposes, and in such other cases as he may think it advisable.

ART. 15. The request for such statement and the statements to be furnished in such cases will be made on the following form:

FORM 680.—OPIUM, ETC. REQUEST FOR STATEMENT AS TO RECEIPT, ETC., OF CERTAIN DRUGS SPECIFIED IN ACT OF CONGRESS APPROVED DECEMBER 17, 1914.

OFFICE OF COLLECTOR, DISTRICT OF ....., 191..

To.....

Pursuant to the provisions of section 3 of an act of Congress relating to the purchase, sale, or disposal of certain drugs, approved December 17, 1914, you are hereby requested to furnish me on or before the ... day of ....., 191.. with a true and correct statement, verified by affidavit, of the quantity of each and all such drugs received by you in this district since ....., 191.., giving the names of the persons from whom the said drugs were received, the quantity in each instance received from each such person, and the date when received.

The statement here called for will be prepared and submitted on the return hereto annexed.

Collector.

Statement showing the quantity of certain drugs received by.....in the..... district of .....

....., being first duly sworn, states that the following is a full and true statement of the quantity and the kind of drugs, described in the act of Congress approved December 17, 1914, received by him (or his firm or company) in the ..... district of ....., from ....., 191.., to ....., 191..:

Table with 5 columns: Date of receipt, From whom received, Address, Particular description of drug, Quantity received.

Subscribed and sworn to before me this ..... day of ....., 191.. [SEAL.]

DUTIES OF OFFICERS.

ART. 16. It will be the duty of agents and other inspecting officers appointed under the provisions of section 10 of the act named to visit at irregular intervals the premises of all persons, firms, or companies registering under said act, or where they have reason to believe drugs of the charter defined in the act are stored, and to see that all requirements of the act and these regulations are strictly complied with. They will, under the authority conferred by sections 2 and 5 of the act, inspect and, when necessary, verify such records, orders, prescriptions, statements, or returns made or received, and at once report for prosecution any violations of the law discovered by them.

11 In case of a firm or corporation, the foregoing statement must be made by a member of officer, who should sign as such.

Where suspected drugs are found on the premises of manufacturers or dealers who have not registered, samples of the same should be procured and forwarded to the laboratory in the office of the Commissioner of Internal Revenue for analysis.

ART. 17. Investigations here ordered made in a perfunctory manner will in no instance be tolerated, and any officer or employee who is found to be negligent or inefficient in the discharge of his duties will be reported to this office for discipline. It is not expected, however, that officers and employees will conduct their investigations in such manner as to annoy or interfere unnecessarily with the business of persons preparing or handling the aforementioned drugs. Officers in making their investigations should keep this clearly in mind. They will, however, see that the law and regulations are faithfully complied with in every instance; and it will be the duty of every person engaged in this business to afford all necessary facilities to such inspecting officers.

W. H. OSBORN, Commissioner of Internal Revenue.

Approved: W. G. McADOO, Secretary of the Treasury.

List of collection districts and addresses of collectors of internal revenue:

NEW YORK.

1. The counties of Kings, Nassau, Queens, Richmond, and Suffolk.—Brooklyn.

2. The first, second, third, fourth, fifth, sixth, eighth, ninth, and fifteenth wards of New York City; that portion of the fourteenth ward lying west of the center of Mott Street; that portion of the sixteenth ward lying south of the center of West Twenty-fourth Street and Governors Island.—New York.

3. The seventh, tenth, eleventh, twelfth, thirteenth, seventeenth, eighteenth, nineteenth, twentieth, twenty-first, and twenty-second wards of New York City; that part of the fourteenth ward lying east of the center of Mott Street; that part of the sixteenth ward lying north of the center of West Twenty-fourth Street, and Blackwells, Randalls, and Wards Islands.—New York.

4. The counties of Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Hamilton, Montgomery, Orange, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Sullivan, Ulster, Warren, Washington, and Westchester, and the twenty-third and twenty-fourth wards of New York City.—Albany.

21. The counties of Broome, Cayuga, Chenango, Cortland, Delaware, Franklin, Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga, Oswego, Otsego, St. Lawrence, Schuyler, Seneca, Tioga, Tompkins, and Wayne.—Syracuse.

28. The counties of Allegany, Cataraugus, Chautauqua, Chemung, Erie, Genesee, Livingston, Monroe, Niagara, Ontario, Orleans, Steuben, Wyoming, and Yates.—Buffalo.

Deaths.

HOMER GIBNEY, M.D., New York City, died February 16, 1915.

FRANCIS HUSTACE, M.D., New York City, died February 17, 1915.

C. EUGENE LACK, M.D., Brooklyn, died February 26, 1915.

JOHN PATRICK MCGOWAN, M.D., New York City, died February 28, 1915.



# NEW YORK STATE JOURNAL OF MEDICINE

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## EDITORIAL DEPARTMENT

### THE FEDERAL AND STATE LAWS IN RELATION TO HABIT-FORMING DRUGS.

**I**NNOVATIONS add to the gaiety of life, and sometimes to profanity if the quality of the gaiety is too subtle. However, the lives of medical men flow along in a peaceful stream with a modicum of gaiety and no profanity except when some unexpected obstruction disturbs its even current; you will then observe a ruffling of its surface, a little swirling, eddying, and—a resumption of its serene onward course. A recent innovation which caused a change in our accustomed method of prescribing certain medicines was brought about by the enactment of a State Law forbidding the sale of habit-forming drugs, popularly known as the Boylan Law. The law in its intent is a good law. It would be a better one if less maternal solicitude had been exhibited for patent medicines and more consideration for the public welfare manifested.

Its object is to prevent the sale of certain specified drugs, *i. e.*, chloral, opium and all of the latter's derivatives, in order to protect the public from the dangerous propensities of "dope fiends" and innocent addiction to these narcotics through the use of patent medicines and the

unwarranted refilling of prescriptions containing them.

Exceptions permit the sale of these drugs under certain restrictions in which we as physicians are particularly interested. We at first criticised and were mildly resentful at some of the provisions of the law, but by degrees accepted and have observed its requirements. The subject is now somewhat worn but retains an element of freshness in the fact that it has not been superseded, as many suppose, by the later Federal Law embodying many of its provisions, so, until further notice, pay due attention to both the Boylan State Law and the Harrison Federal Law. Having had our local ebullition over the former, we can now view with equanimity that of the profession throughout the country over the latter.

The Harrison Federal Law is the better one of the two. It should be welcomed and receive the earnest support of every physician. Compensation for the slight annoyance its observance involves is amply compensated for by the diminution of crime, sickness and poverty in the community. Like all new laws, it will require time and experience to detect and correct its deficiencies. Since we are compelled to observe both these laws, and for the purpose of answering many inquiries, we will compare and interpret their respective exactions.

The Boylan Law requires that the physician, when prescribing any of the prohibited drugs greater than the amount specified, 2 grains of opium,  $\frac{1}{4}$  grain of morphine,  $\frac{1}{4}$  grain of heroin, 1 grain of codeine, 10 grains of chloral, or any of their salts, in one fluid or one avoirdupois ounce, to place on his prescription blank, his name in full, office address, office hours and telephone number, and the name, age, and address of the person to whom and date on which such prescription was issued. These prescriptions cannot be refilled. He is, furthermore, required to keep on record the name and address of each person to whom he administers or disposes of in any way whatsoever any of these drugs, and the quantity of the same. Such record shall be preserved for five years, and always be open for inspection. In order to purchase prohibited medicines it is necessary to procure from the local Board of Health official order blanks serially numbered in duplicate, bound in book form with carbon transfer paper between the duplicate pages, in which must be written all orders and the duplicate preserved for five years. Thus two record books are required, one to keep a record of the drugs purchased; the other for the drugs dispensed.

The Harrison Bill requires the physician to register with the Collector of Internal Revenue of his home district. From the Collector he receives his registry number and from whom he can also procure a book of duplicate order blanks bearing his registry number; with these blanks only can he order the prohibited drugs for his professional use from the manufacturer or druggist. The duplicate order he retains for two years. The physician, to comply with the law, must sign his name in full, the name and address of the patient, and have printed on his prescription blank his office address and registry number, when ordering a preparation containing more than 2 grains of opium, or more than  $\frac{1}{4}$  of a grain of morphine, or more than  $\frac{1}{8}$  grain of heroin, or more than 1 grain of codeine, or any salt or derivative of any of them, in one fluid ounce or, if a solid or semi-solid preparation, in one avoirdupois ounce, or to liniments, ointments or other preparations which are prepared for external use only, except liniments, ointments and other preparations which contain cocaine or any of its salts, or alpha or beta eucaine or any of their salts or any synthetic substitute for them.

Provided, that such remedies are sold, distributed, given away, dispensed or possessed as medicines and not for the purpose of evading the provisions of this act.

*“Abstract of an Official Ruling.—Liniments, ointments or other preparations containing drugs not specifically exempt, used for oral, nasal, aural, ocular, rectal, urethral or vaginal administration, are not, in such cases, used externally and are therefore not exempt from the law.”*

A physician can, in personal attendance on a patient at the latter's home, administer these drugs in any form without recording same.

*“Abstract of an Official Ruling.—Personal Attendance.—A physician must actually be absent from his office and in personal attendance upon a patient in order to come within the exemption of the law.”*

*“Abstract of an Official Ruling.—Record of Drugs Dispensed.—A physician who administers minute quantities of drugs coming within the scope of the law in his office may keep a record of the date when a stock solution is made and the date when such a stock solution is exhausted, without keeping a record of the name and address of each patient to whom such drugs are administered. This plan will be allowed only in cases of those physicians who use minute quantities of these drugs, such as oculists, aurists and other specialists, but when a physician engaged in a general practice otherwise administers such drugs, it will be necessary for him to keep a record of the name and address of the patient, of all drugs dispensed, distributed or administered in his office, and of such drugs left with a patient to be taken in his absence. Only such drugs as are administered by a physician to a patient when away from his office are exempt from record.”*

Compliance with both laws is more annoying than difficult. In one, you register with your local health department; in the other, with the Collector of Internal Revenue. From each official you receive purchase order blanks which will be recognized by the manufacturers. In ordering do not forget to use both blanks, State and Federal, for the same medicines. Employ separate record books and preserve them for inspection when called upon by the proper officials. Your prescription blanks can be made

to conform to the requirements of each law. On the lower left-hand corner have printed line spaces for name, age and residence of patient; on the lower right-hand corner your registry number. Sign full name and date each. An honest attempt to comply with the law is all that is to be expected. Alcoholic and narcotic patent concoctions still wear a leering smile.

### THE LURE OF THE BUFFALO CONVENTION.

THE 109th meeting of the Medical Society of the State of New York—coming the last week of April—is to be unique among the medical conventions of the year. The committees in charge of the arrangements have studied the needs of that large contingent who are unlikely to attend the American Medical Association in San Francisco, and to whom Buffalo is not only attractive but easy of access. The meeting will be fairly representative not only of the Empire State but of the Eastern United States. In making the program, writers and speakers have been secured from the Middle States, from New England, from the great states lying west of us, and from Canada. The President of the American Medical Association honors us by his participation in the opening exercises. Invitations to enjoy the three-day meetings have been extended to the medical profession from the Atlantic to the Mississippi and to our brethren in Canada. Scores of thousands can attend if they choose, and the city of Buffalo, with its ample hotel accommodations, will make abundant provision for the comfort of all who come. The attractions of our splendid meeting place—the greatest armory in the world—have proven irresistible to hosts of exhibitors who are making preparations on a large scale to display the products, both scientific and commercial, of modern invention in the field of health and sanitation. At the present writing, applications for space in the commodious Exhibition Hall of the Armory are being filled every day.

The 65th Regiment Armory combines two very desirable features—it is roomy and compact. There will be no crowding or confusion to disturb the six section meetings or the exhibits, and yet it will be possible for one

to make the rounds of all the meetings in less than ten minutes, with his hat off, all under the same roof. Meals will be provided for the hungry and lounging rooms for the idle and loquacious—the maximum of comfort and profit with the minimum of effort. Surely this is an alluring prospect for the doctor who takes his convention as an opportunity for combining culture with recreation.

A study of the scientific program, published a month ago in the *JOURNAL*, shows that every interest of the profession has received a share of attention. Every specialist can find something of profit in the rich variety of topics occupying the various sections. The five sessions of the new Section on Syphilis deserve special mention. The specialists in Roentgenology will find a number of papers to attract them to this meeting in addition to the large commercial and scientific exhibits in which many specialists have combined to show radiographs and apparatus. Individual exhibitors are showing their eagerness to have a part in this display, and the visitor may expect to learn here what the world is doing with this form of radiant energy.

A wealth of scientific exhibits has been secured. The National Committee for Mental Hygiene will set up its splendid educational exhibit. The American Social Hygiene Association, the Illuminating Engineering Society, the U. S. Department of Commerce and Labor, the U. S. Department of Agriculture, the American Medical Association, the Rockefeller Institute, the Russell Sage Foundation, Princeton, Cornell and Syracuse Universities, the University of the State of New York, and a number of well-known hospitals—all, and more, will be represented by scientific exhibits.

A novel feature of the convention, and one sure to prove alluring, is the course of seven popular illustrated lectures given to the people of Buffalo and their guests of the week. They will exemplify in a most dignified and attractive manner the teaching function of the physician and of the influential lay organizations for the promotion of health and sanitation. Speakers of national reputation will present the subjects of race conservation, child welfare, feeble-mindedness, "safety-first," conservation of vision, and the prevention of blindness. Among the speakers are

representatives of the Province of Ontario, the Children's Bureau and the Public Health Service of the United States Government, the Department of Health of New York State, the Illuminating Engineering Society, the American Iron and Steel Institute, the Vineland Training School, the National Committee for the Prevention of Blindness, etc. Such systematic provision for the enlightenment of laymen is new in the annals of medical conventions.

Then there is the banquet—a brilliant prandial climax!

On Monday, April 26, the Women's Medical Society of New York State will hold its Ninth Annual Meeting in Buffalo, with a scientific program afternoon and evening and a banquet at the Hotel Statler. Guests from Chicago and Baltimore will read papers. On Tuesday afternoon a reception will be given in honor of Miss Julia Lathrop, Chief of the Children's Bureau, of Washington. All women are invited to this reception and to the open meeting immediately following, at which Miss Lathrop will speak on "Why the Children's Bureau Studies Infant Mortality." After this the women will dine together at the Hotel Statler. Wives of the visiting physicians, as well as women physicians are cordially invited to these affairs. Buffalo women are busily planning side trips and entertainments for their guests. Many of the women physicians will take part in the section meetings of the Society.

The latest organization to be attracted to Buffalo by the State meeting is the newly formed Association of Medical Inspectors and Physical Educators. They will help to swell the ranks of the Section meetings.

To all our medical brethren we say cordially, Come to Buffalo, and bring your families. Come Monday and attend the Public Health lecture. Stay until Friday night and go to the great military review of the 65th Regiment in the evening in honor of General William C. Gorgas. Spend the week in Buffalo and Niagara Falls, and go home, if you must, Saturday night. Buffalo has made ample provision for a week of solid scientific study enlivened by relaxation. Will you come?

FRANKLIN W. BARROWS.

### "THE BUMP AND THE HUMP!"

**A** BUMP on a log never wastes its energy in striving to move; its sole ambition is to be recognized as a part of the log—so with many a member of our State Society in his relation to that body.

Through the JOURNAL Dr. Wende made a graceful introductory bow, letting you know what they expected to accomplish at Buffalo where the Annual Meeting of the Medical Society of the State of New York is to be held. Dr. McKee, with true Buffalonian directness, has charged you with a knowledge of the scientific program, and it is with a sense of pleasure that we hope you still preserve the effects of his assault. Dr. Lytle like the courteous Spanish cavalier, opened wide the portals of his magnificent palace, permitted you to look down its beautiful vistas, and said—"All is yours!"

We have been asked to add a few more words regarding "Our Annual Meeting." After all that has been said we feel somewhat embarrassed as to our ability to say more—as embarrassed, in fact, as a young ministerial friend of ours who, standing in the pulpit of a little log church in the wilds of Missouri, in nervous trepidation, let slip the manuscript of his sermon into a knot hole—beyond redemption. When he recovered from his speechless surprise he said—"Brethren, there's a mighty good sermon in that knot hole; you will have to get it out." But frivolous remarks aside—It is your duty gentlemen to bestir yourselves and make the meeting at Buffalo a success. The members of the different committees have worked with the most commendable zeal and enthusiasm to make every section complete in its requirements—not for their own but for your delectation. They have accepted the responsibility of a large monetary outlay, and it is your duty to lend them what aid you can to make good.

Have you read their two-page advertisement in the JOURNAL? If you have not, do so. It possesses all the inspiring breeziness of the once wild but now cultivated West. Its hospitable tone, its freedom from formality, its air of generous goodfellowship should appeal to you. They have done their share—do yours. Do not be a bump on the log but a hump on the lively buffalo.

## SOME ACUTE SURGICAL DISEASES OF THE ABDOMEN IN CHILDREN.\*

By L. MILLER KAHN, M.D., F.A.C.S.,  
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THE recent development of abdominal surgery in the child is most gratifying. The possibilities of surgical interference in certain acute intraabdominal affections in the young are becoming widely realized. While only a few years ago the diagnosis and treatment of acute surgical conditions in the abdomen of the child were but slightly understood, one may safely say that this knowledge is now general and is being acted upon to enormous advantage and the saving of life.

We are progressing. A look backward will convince us that we have not stood still and that with the advent of modern methods and the general advances in surgery, the surgery of childhood as a whole, and of the abdomen especially, have made great strides.

In 1860 J. Cooper Forster of London published his work of 348 pages on the surgical diseases of childhood, and nowhere mentions the abdomen as the possible location of surgical disease. In 1869, Holmes, in the second edition of his large work, "Surgical Treatment of Children's Diseases," says of the then radical operation for hernia: "I can hardly reconcile myself to expose the patient to an operation involving, in my opinion, very considerable danger, without some good grounds for anticipating permanent and complete success; but are there any grounds for such anticipations? I confess I cannot see them."

After admitting that reduction of intussusception by enemata was in his opinion "imaginary," Holmes proceeds: "With regard to cutting into the peritoneal cavity, I would entirely abstain from any such proposal in a case which I regarded as one of intussusception, and only very exceptional circumstances should induce me to follow the idea in any case of obstruction." In the *American Journal of Medical Sciences*, January, 1862, a writer said that there had been no case of recovery under one year of age from intussusception. Of course, appendicitis as a surgical disease was entirely unknown. While these statements were made in the days before antiseptic surgery was an accomplished fact, when contrasted with our present slight mortality in these conditions they serve to give point to the assertion that surgery in the abdomen of the child is improving. Further improvement will be brought about from two sources: eternal vigilance on the part of all physicians who are first called to treat the little sufferers, and attention to the minutest technical details on the part of the surgeons.

\*Read before the Medical Society of the County of the Bronx, January 15, 1915.

### ANATOMICAL DIFFERENCES.

Notable differences exist in the surgical problems presented by the adult and by the child, and nowhere is the diversity more marked than in the abdomen. The complete development of the abdominal viscera is not accomplished until some years after birth, and this extra-uterine development taking place during the first few years of life, marks a period of anatomical and physiological differences in the abdominal viscera of the child from those of the adult. This continuing postnatal development accounts for the frequently noted uncertainty of position of the abdominal organs in the young.

The abdomen of the child is protuberant mainly because of the relatively large liver and the shallowness of the pelvis. This shallowness of the pelvis combined with the slight concavity of the sacrum make it necessary for the abdomen to accommodate the bladder and the upper part of the rectum when distended.

The cæcum to arrive finally in its normal place must undergo the process of migration from the left side, up to the spleen, across the abdomen, and, turning at the hepatic flexure, descends to the right iliac fossa, where after rotation inwards it becomes fixed with a very short or no mesentery. In this period of change of position the mesentery of the large bowel has a considerable length and is not so fixed as to establish the permanent resting place for that viscus. The whole bowel grows in length and size. The process of migration may be, and often is, arrested at any point in its course, accounting for the left-sided, the retro-colic and the high-placed right-sided appendices. The omentum in the child is very small and flimsy, and where so much help is expected from this most useful structure in the adult, little protection against injury or infection is afforded by it in the child.

In the child the mesentery of the appendix is often very short (Kelly) and that portion of the appendix which extends beyond the mesentery is deficient in vascular supply. An acute inflammatory process in the appendix will accordingly cut off a relatively larger portion of the blood supply, and gangrenous perforations of large size are more likely to result. The coats of the child's appendix are also more delicate. (as, indeed, which of his organs are not), especially the submucous coat.

The inability of the intestinal walls to resist the passage through them of micro-organisms would seem to account for the greater prevalence of pneumococcus peritonitis in the young. The persistence after birth of the mesenteric duct (Meckel's diverticulum) may cause peritoneal infection or intestinal obstruction. Failure of normal openings in the abdominal wall to close at the proper time result in hernias which may become obstructed or strangulated. Finally, obstruction is occasionally met with due to irregular peritoneal bands. It is now fully recognized

that the foetal bands of Treves and Jonnesco often persist through early life, and, indeed, throughout the entire life of the adult.

It will be seen from the foregoing that both in function and structure the normal abdomen of the child has marked differences from the normal abdomen of the adult, and as these differences continue to become more clearly understood the problems of abdominal surgery of the child will be the more readily solved.

#### THE APPENDIX.

The appendix is the most fruitful source of infection of the peritoneum, and it may become the site of inflammatory changes at any age. Stettiner reports a necropsy in a child of four weeks which showed pronounced appendicitis. While appendicitis occurs most commonly after two years, it is a fairly common experience to meet it in children under that age.

Is "appendicitis in children a chronic disease with acute exacerbations?" Unfortunately the surgeon cannot answer that question, for he rarely sees the child in what are inappropriately called the minor manifestations of the disease. It has been contended, and with very good evidence in support, that the cramps and colics in infants and older children are mainly due to chronic inflammation in the appendix, and that the acute symptoms of peritoneal irritation are merely the evidence of an exacerbation of the chronic disease. The question can only be answered by the pathologist adding his findings to carefully taken histories of a series of cases.

The diagnosis of appendicitis is the most important single fact concerning it, for once the diagnosis is clear, the proper treatment can be instituted. The history of sudden attack of abdominal pain, vomiting, abdominal rigidity, tenderness, shifting of the pain and tenderness from the epigastrium to the right lower quadrant and a rise in temperature are the most valuable diagnostic aids. Careful distinction is to be made between voluntary and involuntary spasm of the abdominal muscles, and certain confusion will result if one does not distinguish between subjective pain and tenderness to point pressure. A mass is often to be felt in the right lower quadrant. Often there are urinary symptoms, either retention of urine or pain on micturition, particularly when the appendix is situated in the pelvis or is adherent to the bladder. Leucocytosis as an aid to the diagnosis of appendicitis has undeservedly fallen in favor. Constant use familiarizes one with its fluctuations and makes it available not only as a help in deciding upon operation, but in differentiating such conditions as kidney colic, intussusception and the like. A very high leucocytosis (40,000) warns of a possible pneumococcus peritonitis. Very valuable information is to be obtained from the observation of the pulse, its rapidity, quality and rhythm.

Owing to the uncertainty of the location of the abdominal viscera in the young, one may find, and must always be on the lookout for, the appendix anywhere in the abdomen, especially the undescended appendix under the liver or the pelvic appendix with its masked symptoms and deceptive history. The referred pain in pleurisy and pneumonia is often puzzling. A diagnostic point of value here (Quain) may be obtained by allowing the palpating hand to rest on the abdomen; if the case be one of pneumonia the muscles will relax after the few minutes, permitting the hand to sink into the abdomen. If, however, the case be one of appendicitis, the resting hand meets with continued resistance, perhaps increasing the pain. *The treatment of appendicitis is by operation.* With the anatomical conditions in the child all favoring large perforations, and considering the ineffectiveness of the omentum, one readily sees the great urgency for early operation.

#### ACUTE INTUSSUSCEPTION.

Acute intussusception may be said to be a disease peculiar to infancy and childhood. The simplest explanation, and the one that is perhaps the most tenable for this swallowing of one section of bowel by another, is that which holds that an area of irregular muscular contraction in the intestine acts as a foreign body and that this irregularly contracted area is therefore passed on into the succeeding loop. Then, too, there is the greater relative length of the mesentery and greater freedom of the movement of the intestine.

Sudden onset of pain (screaming), shock, evidenced by blanching, vomiting, blood and mucus in the stool followed by failure of the bowels to move, should lead to the correct diagnosis. There is often to be felt the sausage-shaped tumor in the abdomen, and there may be in advanced cases a mass felt in the rectum, but while these are valuable signs when present they are by no means essential to the diagnosis. Waiting for the sausage-shaped tumor or the mass by rectum may put the sufferer beyond surgical aid. The intermittency of the screaming is rather characteristic, as during the interval of the contractions the child may rest comfortably or, indeed, sleep.

#### INTUSSUSCEPTION WITHOUT OBSTRUCTION.

Subacute intussusception sometimes occurs in which there is an incomplete intestinal occlusion and flatus and stool are passed. In the two cases I have seen there was a history of sudden onset with blood and mucus and the pain and crying were intermittent. In this type of intussusception the symptoms are not so severe and assume a subacute form, as there is no interference either with the arterial or venous circulation in the mesentery of the intussusceptum and, therefore, no true strangulation of the affected loop. The

diagnosis is sometimes extremely difficult to make.

A child of six years presented such a history, but no mass could be felt abdominally or rectally, vomiting occurred only once in six days, and the bowels moved slightly every day with enemas. There was no abdominal distension. The temperature was at first sub-normal, as it so often is in intussusception.

The outstanding feature of the case was intermittent intestinal spasm accompanied by severe pain. The intestinal contractions were plainly visible through the abdominal wall. This, with the history of sudden onset, was sufficient to establish the diagnosis. In spite of the presence of an ileo-ileo-colic intussusception there had been no complete occlusion of the bowel nor strangulation of the intussuscepted loop. This was undoubtedly due to the great length of the mesentery. The intermittency of the spasm (crying in the young) I have come to consider an important point in the diagnosis of intussusception.

When patients suffering with intussusception are seen early by the surgeon and no time wasted on the uncertainties and vagaries of bowel inflations and injections, the surgical treatment is extremely simple. The whole operation of opening the abdomen, reducing the intussusception and closing the wound may be accomplished within ten minutes. It is only in those patients seen late that resection must be resorted to, and then, usually, with only a fair degree of success.

One point in the technique of the operation: the incision in the abdominal wall should always be made on the right side at the level of the tumor, and if no tumor is to be felt, then with the umbilicus as its mid-point, as the intussuscepted mass is usually under the liver or in the epigastrium.

#### PNEUMOCOCCUS PERITONITIS.

Of peritonitis due to the pneumococcus much has been written. Since the first report of a case by Bozzolo in 1890 much progress has been made in its early recognition and treatment, but it is highly desirable that we have a biological method for ascertaining rapidly, before the abdomen is opened, with which organism we are dealing. If one knew in advance of opening the abdomen that the infecting organism were the pneumococcus, the general plan of immediate operation might be altered to accord with such knowledge.

The place of entrance of the pneumococcus into the peritoneum is uncertain. It may be through the bowel wall, and from anatomical considerations this is likely, or through the blood stream, through the lymphatics, by direct extension from the pleura, or through the tubes in the female. Most commonly there is at first a diffuse peritonitis which tends to become localized, and if the strength of the child can be maintained

through the period of the diffuse peritonitis, the exudate will become localized in the pelvis, the flank, between the loops of intestine, or under the diaphragm. The invasion of the peritoneum by the pneumococcus may be secondary to a pneumonia, but may occur entirely independently of any lung involvement. There will be present the ordinary signs of peritonitis with pain, tenderness, some muscular rigidity, vomiting, and later in the disease, a doughy resistance in the abdomen. Chief among the characteristic symptoms of this condition are diarrhoea, the great prostration of the child without the correspondingly acute signs in the abdomen, and the high leucocytosis.

An exact diagnosis here is highly desirable, as it would guide us in some measure as to the time of operation, but if the causative factor in peritonitis is in doubt, laparotomy is imperative. If one could be absolutely certain, by the aid of some biologic method, that pneumococcus peritonitis was the condition, it is my opinion that it would be better to await the subsidence of the acute stage and operate in the more favorable stage of localized abscess.

This policy of waiting for the acute symptoms to subside has been followed repeatedly with success.

#### INTESTINAL OBSTRUCTION.

Obstruction of the bowel in hernial openings is not uncommon, but often the protrusion is so slight as to be overlooked. The protruding loop may become strangulated even in very small children. Reduction may generally be accomplished under anesthesia. In a child four weeks of age I was unable to reduce the strangulated bowel in an inguinal hernia, even under anesthesia, and the bowel could only be replaced within the abdomen after the internal ring was divided. The opening in the peritoneum was about the diameter of a goose quill. This case emphasizes the necessity of examining the hernial openings in cases of unexplained vomiting, as the intestinal obstruction from this source is apt to go unnoticed.

As Meckel's diverticulum persists after foetal life in only 2 to 4 per cent. of all individuals, it plays a minor rôle in the abdominal surgery of the child. Becoming infected, it is subject to the same changes as is the appendix and exhibits the same symptoms. Sometimes Meckel's diverticulum acts mechanically to produce intestinal obstruction. Pathologic states due to this duct are happily rare. In the male, severe abdominal symptoms are produced by torsion of the spermatic cord. Undescended testes are also liable to cause marked abdominal disturbance. In the former there is found a swollen tender mass in the inguinal canal, while in the latter there is noted the absence of the testis in the scrotum.

#### DIAGNOSIS OF THE ACUTE ABDOMEN.

In the diagnosis of the acute abdomen of the child one need scarcely consider infection of the

gall-bladder or perforation of gastric or duodenal ulcer, as these conditions are practically unknown. The gentle palpating hand, with the child's attention elsewhere, is very informing. A full urinary bladder has often obscured a possible diagnosis. No examination of a sick child is complete without a bi-manual palpation of the abdomen, that is, with one finger in the rectum and the other hand on the abdomen. "Use all gently." Referred pain in the abdomen must never be out of mind. Practically all of the acute conditions in the abdomen of the child have a way of giving warning by sudden onset, which is followed by a period of quiescence. This quiescent period lulls the child, the parent, and often the physician.

#### OPERATION IN CHILDREN.

Up to a certain point children stand operation well, but there is a definite limit to their resistance, and care must be exercised not to go beyond it. Vincent has called this resistance beyond which one may not safely go "the margin of safety."

Exposure of viscera, loss of blood and prolonged anesthesia affect children badly. Ether is the anesthetic of choice and preferably by the drop method. Little infants should be swathed in cotton and operated upon a warmed table. They should be protected against the loss of bodily heat.

Nothing adds so much to the speed of an operation as knowing in advance what one is to deal with and what one will have to do.

Recognizing the pathology and going immediately to it surgically without unnecessary exploration is the best way to insure success.

### THE RELATION OF OPHTHALMOLOGY TO GENERAL PRACTICE.\*

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THE relation of ophthalmology to general practice has, within the last ten or a dozen years, assumed a very different position from that formerly held. In 1909, before the Section on Ophthalmology of the A. M. A., the chairman, in giving his address, entitled "Ophthalmologic qualifications which should be demanded of the general practitioner and of the specialist, respectively," held that ophthalmology should be so taught in all medical schools by making its clinical courses, as well as lecture courses, compulsory and not optional; that the general practitioner will be made competent to treat all common diseases of the eye, and even to do simple refraction. This is now being done by our better medical colleges.

The older ophthalmologists were chiefly concerned with inflammatory and surgical diseases

affecting the eye only, remaining ignorant of and indifferent to such relations as might exist between the eye and the general system, except as regards those diseases which arise elsewhere in the body and then later affect the eyes, such as diabetes, Bright's disease, arterio-sclerosis, syphilis, tuberculosis, etc. Ocular inflammations, ocular operations, and ocular results of systemic diseases, these were the limits of their interests. That the eye was the starting point of systemic diseases was unsuspected. Of late years more attention is being paid to the systemic results of ocular conditions. I do not mean in such ways as the circulatory and metastatic transfer of inflammatory and infectious diseases from the eye to other organs, nor to the extension of localized inflammations to adjacent or even distant ones. That is a matter of which all physicians have always taken sufficient notice.

The abnormal conditions of the eye which set up systemic results in other parts of the body may not of themselves be morbid; they do not generally originate in inflammatory or pathologic conditions, but simply in optical ones. This physical optical defect of such eyes leads to physiological disturbances brought about by the adjusting mechanism of the eye attempting to bring about clear vision, and this disturbance of physiologic function leads to pathologic conditions.

Eye strain is the unfortunate and inexpressive term that has come into use for the results that follow the attempt of the eyes, brain and correlated organs to overcome this defective function of the optically imperfect eyeballs and mechanisms. The optical defect is not morbid and is pathologic only secondarily and indirectly. This straining of physiologic muscles and nerve centers is not pathologic, but it illustrates the great truth that abnormal physiology is the origin of most pathology. It is in this way that optical conditions of the eye through exhaustion of the brain and nerve centers reflexly cause such general troubles as headaches, paroxysmal-neuroses, epilepsy, chorea, migraine, sick-headache, anæmia, denutrition, gastric, digestional and pelvic disorders. We have often seen patients become neurasthic to the extent of invalidism, with nutritional disturbances which cause marked loss of flesh, who, after a proper examination and relief of their ocular defect, were brought back to ordinary health.

The prevention of this morbid ocular physiology by proper glasses prevents from 75 to 90 per cent (according to different authorities) of all inflammatory and surgical diseases of the eyes. It will not, of course, prevent ocular results of systemic disease, such as albuminuric and diabetic retinitis, toxic amply opia, optic neuritis, etc., but such conditions are relatively uncommon. The far greater proportion of all ocular diseases are those of the extrinsic muscles, inflammations of the conjunctiva, cornea, and iris, glaucoma, high and increasing myopia and

\* Read before the Medical Society of the County of Jefferson, at Watertown, July 9, 1914.



cataract. It has been my fortune to see several cases of beginning cataract disappear and sight return to normal after the proper adjustment of glasses, but this result can never be promised, and we must expect the greatest field of usefulness for proper refraction to be a preventative of, rather than a cure for, cataract. Iritis and glaucoma seldom affect an eye that has for years previously been wearing a right correcting lens. Retinal and choroidal disease, except those types which are due to general disease, such as syphilis, diabetes, Bright's disease, etc., are usually caused by ciliary strain of uncorrected ametropia. All of these diseases are much more liable to attack an eye whose resisting power is lowered by eye strain.

Disease of the frontal sinus is closely related to eye strain, the patients locating their pain in the region of the frontal sinus. Reflex congestions of the upper air passages, pharyngitis, laryngitis, aphonia, even common colds, may be due, more frequently than supposed, to eye strain. This fact is so apparent that many ophthalmologists who ten years ago did only eye work are today forced to study and treat the nose and throat as well, due to their intimate relations.

Optic atrophy is often caused by the absorption of toxins from inflammations and empyema of the nasal accessory sinuses, particularly the sphenoidal sinus.

Retro-bulbar optic neuritis is frequently caused by disease of the nasal accessory sinuses complicating a common coryza, the infection extending by direct transmission from the lining membrane of the sinus to the lining membrane of the optic foramen. The swollen periosteum pressing upon the axial fibres of the optic nerve causes a central scotoma, which can be recognized by the ophthalmoscope as a swelling of the retina in the region of the macula.

This extension may take place either through a perforating vein or through a natural dehiscence in the thin bony wall.

In the toxæmia of pregnancy we may get an œdema of the retina causing sudden blindness, or an exudate of nitrogenous substance causing albuminuric retinitis, which renders the prognosis grave and calls for an abortion or premature labor.

In general surgery it may seem absurd to say that eye strain could even prevent appendicitis and surgical operations, yet one of New York's most eminent surgeons, Dr. Robert T. Morris, wrote in the Medical Record in 1903 as follows: "A very large group of cases of intestinal fermentation is dependent on eye strain. These cases are perhaps quite as often overlooked as any others, but as soon as we have all become familiar with the external signs of eye strain, fewer cases will get to the surgeon with the diagnosis of abdominal disorder. Those that I see are sent to the office most often with the request to have the appendix examined, because the dis-

tension of the cecum is apt to cause more pain than distention of other parts of the bowel and attention is attracted to this region. If there are external evidences of eye strain these cases are referred to the ophthalmologist along with my cases of "nervous dyspepsia" and "gastric neuralgia," and some of the most brilliant results that I have observed in any kind of medical practice have come out of the treatment that was instituted."

In orthopedic surgery the relation between eye strain and spinal curvature is well understood. It is brought about in this way; the patient having astigmatism with the axis 10 or 15 degrees from the vertical or horizontal, the head is obliged to be tilted to one side in order to see plainly. Ordinary print, or, in fact, almost all objects, architectural and natural, are made with their constructing lines in the horizontal and vertical meridians. The head is turned to bring the axis of their astigmatism from an oblique meridian into one or the other of these positions, and it is this constant tilting of the head which causes compensatory curvatures of the spine. In our public schools the pupils have been safeguarded against disease, defects, and pernicious habits.

First, by the modern sanitary and architectural construction of the school, proper attention being given to the position of desks and seats, and to the position of the light, which might cause round shoulders and spinal curvatures by forcing the child to assume an unnatural attitude. Secondly, our State law requires every student to have a medical examination by some qualified physician at least once a year.

This is a great step forward by our Educational Department. An examination is required of heart and lungs, ear, nose, and throat and other organs, but nothing is said about the eyes.\* The condition of the eyes of the children is left to teacher or nurse, who frequently advise the pupils to consult an optician for glasses. This is a grave mistake, and the examination of the eyes should be included in the medical blanks to be filled out by the physician. Where optical defects are found, the pupil should be referred to the ophthalmologist, who alone has the knowledge and skill to fit the proper lenses. Many of these cases of defective sight are due to some diseased condition, and unless examined by the physician the true condition would be unrecognized and untreated.

In neurology there is almost no limit to what the refractionist may claim. We have all seen cases of headache, migraine, chorea, epilepsy, irritability of temper, neurasthenia, neuroses of the stomach, splanchnic-neurasthenia, melancholia, and most of the whole list of nervous troubles, markedly benefited and sometimes apparently cured by attention to the refractive error. What else could we expect when we realize

\* This is so, at least in our city.

that the adjusting mechanisms of such eyes are compelled to exert themselves continually during the waking hours in order for these patients to see clearly. What other organ besides the heart and lungs works so many hours? Unless the defect is too great to be overcome we have this constant expenditure of nerve force, which exhausts the nerve centers and is the exciting cause of all these troubles which I have mentioned. In fact there is almost no disease which the physician is called upon to treat that may not be due to or influenced by eye strain.

In general practice, how often do we find the physician self-condemned by his own words, "I do not pretend to know much about the eye," and also by his superficial treatment of even ordinary affections of the eyes.

Ocular diseases are, therefore, unrelieved, suffering and distress prolonged, defective vision produced through corneal scars, iritic adhesions and plastic exudates, even blindness produced and eyes lost, all of which might have been avoided had the physician used the same skill in diagnosis and treatment that he uses in other branches of his work, or had he obtained competent and seasonable counsel in difficult or obscure cases, or referred them to the specialist for treatment.

But then you may say the general practitioner is not supposed to treat the eyes. But why not? Does he not do minor surgery, treat diseases of the skin, of children, of the nervous system and of other branches which are made the subjects of special study and exclusive practice by the surgeon, dermatologist, pediatricist, neurologist, etc.?

Patients afflicted with eye diseases are entitled to the same attention from the family physician as they receive in other diseases, and he should be prepared to give it, particularly in country districts. Such patients may be far distant from an ophthalmologist, may not be able to pay either his fees or the expense of travel, and they should not be put to unnecessary trouble, inconvenience or expense.

Again, of all diseases and abnormalities, those of the eye are the last that should be excluded in the physician's practice, for they are both of frequent occurrence and are found everywhere.

Then again, the physician will be able to give timely aid in these diseases, to administer preventative as well as curative treatment, to make diagnoses distinguishing benign from severe affections, and to judge properly when his efforts should be reinforced by consultation with the specialist, and when the ophthalmologist should have full charge. The idea that ophthalmology is so suited to exclusive study and practice, so separate from other departments of medicine, so technical or difficult to understand, as to be entirely separated from general medicine, is not tenable. The fact is, ophthalmology cannot, in justice to general medicine, or even to itself, be

thus made an exclusive and isolated field, because of the manifold relations of the eye to other parts of the body. The subject is not so difficult to comprehend or apply. The eye is readily accessible to examination; its anatomy, functions, pathology and relations easily understood. The diagnosis and treatment of its diseases need no more skill than those of other organs. It should therefore be regarded as part of general medicine and hold its proper place in study and practice. No organ lives to itself alone; there is no function that does not influence every other function. This is the truth which disallows a narrow specialism and is the prime factor which makes it imperative that the ophthalmologist have a general practical knowledge of general medicine (as there never was a competent specialist who was not a clinician as well), and it also is just as necessary for the general practitioner to have a good understanding of ophthalmology if he is to render full service to his patients.

We are rapidly approaching the time when neglect of a case of ophthalmia neonatorum, the confusion of iritis with glaucoma, the failure to recognize corneal ulceration, the temporizing with penetrating wounds of the eye, will have become relegated to the sins of the past.

Also the time has arrived when, in the hands of the general physician, the use of the ophthalmoscope is as valuable as that of the microscope, or the more recent blood pressure apparatus. The ophthalmoscope gives valuable indications of the retinal circulation, which is valuable not only as regards the condition of the heart, but also is the means of determining the prospects of life.

Marked ocular disturbances from disease elsewhere in the body indicates a development seriously threatening health and life; retinal hemorrhage, in diabetes and chronic interstitial nephritis of the vascular type, indicates a serious condition, and is often the first symptom which the patient observes, and is the symptom which brings them to the physician.

The ophthalmologist frequently discovers the general disease in his routine examination of the eyes for improvement in sight or the adjustment of reading glasses, often before the family physician has even been consulted.

In diabetes the ocular symptoms are both many and varied; the most common are changes in the ciliary muscle, which affect the refraction of the lens, which cause the opacities of beginning cataract, and changes in the retinal circulation.

Albuminuric retinitis means death in a period of a few months, or at least one or two years. By the use of the ophthalmoscope all of these fundus changes can be discovered by any physician at all familiar with its use.

In cases of refractive errors and muscular imbalance of the eye, with their manifold reflexes, the physician is generally more at sea than in

ocular diseases, and is unable to do anything for them. Such cases, instead of consulting the ophthalmologist, frequently go to the optometrist, whom even the physician sometimes recommends as competent and trustworthy. The physician's attitude is therefore favorable to the optometrist, and leaves an open field to this aggressive layman, who appropriates to himself a far-reaching branch of medicine.

You know what deception, pretense, charlatanism and harm attends his practices; you know, too, what success has been attained by the so-called reformers among his kind in hoodwinking the legislators of our own state and others into bringing into legal existence, through license, the so-called "profession" called optometry, and how this, supposed to be safeguarded by a board of examiners, of which, I am sorry to say, physicians have sometimes been members, has been used to cloak a perilous ignorance of ocular physiology, pathology and optics.

This whole business, from beginning to end, is but a prostitution of a part of medical science to those low commercial ideals of trade which are made manifest by the character of their advertisements and the results of their work.

They are even now in our own city advertising in the daily press to cure headaches, nervous disorders and stomach troubles, a cure guaranteed and examination free.

For this encroachment upon legitimate medicine, and the unfortunate result to the public which follows, the profession itself is largely responsible, through the physician's own lack of knowledge of a subject which he should understand, and through his fostering the sentiment that the optometrist can properly and without danger perform this work. The ophthalmologist also is sometimes at fault, performing this work in a careless, perfunctory manner, when, at best, it is the most trying and tedious work which he is called upon to do and its far-reaching results make it the most important. It should therefore receive his best service.

Several of America's leading oculists advocate the general practitioner doing this refraction work, correcting the simpler forms and referring the more difficult cases to the specialist. This may be advisable in the country and smaller towns where there are no oculists. It has been my pleasure to review the refraction work of several such country practitioners and they did the work very well indeed, much better than the optometrist. Then again, the physician is much more trustworthy than the optometrist, with his medical ignorance, and by referring the more difficult cases to the ophthalmologist, the physician will then be a powerful factor in stamping out the insidious growth and dangerous charlatanism of the "eyesight specialist," and in the end, the whole medical profession will be honored and dignified, and the public enlightened and benefited.

## SOME OBSERVATIONS, THERAPEUTIC AND OTHERWISE—FROM A GENERAL PRACTITIONER.\*

By M. JEAN WILSON, M.D.,  
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WE HAVE arrived at that point in the development of the medical profession where there are very few general practitioners left. Nearly every medical man, even in the smaller towns and villages, tries to persuade himself or the public, that he is an expert or nearly one in at least one of the many branches of the profession. The public needs the general practitioner and the man in general practice and the public both need the specialist. I was once asked what was my specialty, and I replied, "Old people and children." And, as by force of circumstances I have withdrawn largely from the latter class of cases, I now feel that I am in the fullest sense a general practitioner with a limited practice.

The science and art of healing is a good broad definition of therapeutics. Diagnosis comes first. The two together comprise the whole field of medicine surgery and the allied specialties.

The task of the general practitioner is often rendered troublesome on account of the difficulty in making a correct diagnosis. This is especially true in abdominal cases. As is well known, many a case of appendicitis, acute or chronic, has been overlooked or diagnosed so late that what would have been a safe and comparatively simple operation is converted into a dangerous one, with a consequent large death rate.

Gall stones and gall bladder infections are also frequently mistaken for functional disturbances. Great care should be exercised in the diagnosis of any abdominal condition. Mistakes now occur less frequently than formerly, due both to better diagnostic methods, and to the fact that it is now considered bad practice to use the hyperdermic needle, or to administer opiates, without a careful examination first. This is for illustration to show the necessity for careful diagnosis, and to refer the surgical case to a surgeon; or a case needing special treatment, to the appropriate specialist.

While continuing the discussion of medicinal therapeutics I will omit speaking of the serums, the vaccines, the animal extracts, and the newer synthetic preparations, all of which are useful, and in a way have superseded much of the old-fashioned therapeutic measures of twenty-five years ago. The phylacogens are comparatively new, and personally I would like to hear a discussion of their usefulness, their limitations, and their dangers.

There still remains a wide field of usefulness for the good old-fashioned remedies of our fathers, but as we advance in years and experience,

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we are quite apt to go to extremes. Are we all to become therapeutic nihilists without faith in our remedies, with confidence only in surgery or mechanical, or hygienic measures? The surgeons and some specialists are quite inclined to reach this stage of development.

On the other extreme, we see an abiding faith, a confidence in medicine, that dozens of failures will not shake. Of the two extremes in a medical man, I prefer the latter, as he always has something to offer you. The former, in his conceit, and often his ignorance is intolerable. Between these two extremes there is the level headed, intelligent, conscientious man, who studies not only pathology, symptomatology, etiology, and differential diagnosis, but also the remedies. His reading is along broad lines. He studies his text books on practice, and not satisfied with this alone, he also studies applied therapeutics and *materia medica*. Then, by noting the effect on his patients, his experience and observation make him a good man in general practice. We often hear such a one spoken of as a "good prescriber." This is a good reputation for any medical man, one which should not be lightly esteemed. I have observed this frequently in men in small country towns; in men who have had a very limited preliminary education. On the other hand, I have seen men with an A.B., an A. M. or B.S., after their names, whose knowledge of therapeutics and *materia medica* was so limited as to excite one's sympathy.

The rapid strides in the science of medicine, and the vast number of new remedies, proprietary and otherwise, have given us the habit of depending upon the newer things. The very latest up-to-the-moment treatment is a fad with some, when the well recognized older treatment would be more effectual. For instance, the bacillus *bulgarius* is modern, but it will not take the place of castor oil. An intelligent use of both gives better results than either alone.

I wish to appeal especially to the younger men of the profession, to give more time to the study of therapeutics and *materia medica*, and as these are carefully studied they lose no interest in the purely scientific aspect of medicine. The looseness with which many valuable remedies have been used in the past, and the lack of success in their use, is well illustrated by that good old reliable drug digitalis.

That splendid writer, and great authority on diseases of the heart, James McKenzie, says of it: "It is seldom that I have been able to say that I have saved a patient from immediate peril by the use of drugs; but this I can say with confidence—that I have repeatedly seen patients in evident peril of death removed rapidly from danger and restored to condition of comparative health and fit for work by the judicious use of digitalis. The manner of its application needs however, very careful attention, for it is a drug

that needs to be applied on certain definite lines, if full benefit is to be obtained from its action. I think it necessary to insist upon this point, for the somewhat "rule of thumb" method so generally employed, fail to get the full amount of benefit which this drug is capable of bestowing."

This is strong language, but it is true, as many of us can testify to from personal experience. He then proceeds to point out the danger of its use, or rather its too long continued use in that class of heart cases which it is prescribed to relieve or cure.

We have all seen digitalis prescribed where either aconite veratrum, or nitroglycerine was indicated, simply because the symptoms were referable to the heart, and digitalis was a heart remedy. The indications and contra indications for the use of digitalis would take more time than I have at my disposal, but they are worthy of our careful study.

I wish to emphasize one central idea, and that is more care, study and thought in prescribing.

In quite a long practice, I have had as consultants many men in the different specialties, and it has always been a source of amusement to see how differently different men in the same specialty will treat the same cases.

The surgeons are all agreed, however, and have one sovereign therapeutic measure, which is "operative."

In justice to the surgeon, I wish to say that I believe there is too little surgical work done, rather than too much, and that what is done, is too often done too late. It is quite a common thing to accuse surgeons of a desire to operate on all cases they see, but my experience is that they are conscientious in their work. The internists are divided up into what might be termed sub-specialists—one takes the lungs; another the heart, and still another the contents of the abdominal cavity and pelvis. The latter the gynecologist grabs and holds, except when he has to let go to quarrel with the general surgeon. Given one case to examine and prescribe for by two internists separately, and at different times, and I will guarantee that their treatment will differ as much, or more, than their diagnosis.

If the examination is made at the same time, you may be assured that the diagnosis and treatment will agree—the stronger mind predominating. We, however, in cases of obscure diagnosis, seek their aid and appreciate their help. The neurologist is the smoothest, most finished product in medicine. He is a conversationalist of the highest type. As an expert witness he is a wonder. In diagnosis he is usually correct. His classifications and sub-divisions are a work of art, that puzzles the mind of ordinary mortals. But when it comes to therapeutics there seems to be no definite ideas, or as many different ideas as there are different neurologists. A neurasthenic patient of mine once went through the

line of three or four. The first said it was a neuropathic condition of central origin and prescribed various proprietary sedatives, containing bromides scutelelaria, etc., beginning with penta bromides and ending with neurosine. This treatment not being successful, the patient went to another, who said that in connection with the neurasthenia there was a heart murmur, and casually remarked that it was similar to a murmur which he had. He prescribed digitalis and Bland's Mass. The patient improved for a time, but finally got to feeling bad again. Incidentally, I wish to mention the fact that I could not discover at any time the heart murmur. The patient finally asked me to send her another nerve specialist which I did, and he informed her that her condition was the result of intestinal auto-infection, and recommend castor oil, and colonic irrigation, and if this did not cure her, he would use hypnotism. All of these measures were faithfully carried out, as she was a young lady of independent means. Again for a time she seemed to improve. The improvement did not continue, and she partially lapsed into her old condition. About this time she moved to a city with her parents and was lost to me for a time. As she came back for a visit, she called at my office and informed me that she was much better. She had found out what was the trouble, as she had been to another specialist. She could not remember the name of the disease she had, but had written on a prescription blank Cholæmia or Cholaemic poisoning, and showed me the brown tablets that she was taking, which, upon examination, proved to be Sodium salicylate about five gr. strength. She also smiled and gave me to understand that she was to be married. When she returns now to visit her former home, she is rosy and apparently healthy, and exhibits proudly her two children.

Now I have often wondered, which one, if any, of these men had made a correct diagnosis, and also which line of treatment, if any, was of benefit. It so often happens in these floaters, that when they are about to get well, that the particular medical man, in whose hands they are, gets a whole lot of undeserved credit and reputation.

The external medical man, or the dermatologist is the one who excites my admiration as a prescriber. He seems to be able to do the right thing at the right time, and he gets results. He combines his germicidal drugs with a soothing base. He cures you, he relieves you of pain, and I have always felt, when a patient paid the consulting fee, that he had received full value.

The dermatologist has the advantage of being able to see and feel the part affected, and his work can be more scientific than that of the internist or the neurologist, but we may all well emulate his example and try to do better work in prescribing, and in our general therapeutic procedures. If we do this, our work will be more

satisfactory to ourselves, and to our patients, and much of the competition from osteopaths, chiropractors, and advertising fakirs which we now have, will be eliminated.

## REPORT OF A SURGICAL SERVICE AT THE BUFFALO GENERAL HOSPITAL.

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and  
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THE object of this paper is two-fold: first, to report the cases occurring in one-half of the general surgical division of Buffalo General Hospital during the four summer months of 1914; second, to analyze the results and emphasize how erroneous statistics may be unless patients are carefully traced and studied at later periods.

We furthermore desire to state that the opinions expressed by us are purely personal and are not in any way representative of the staff. Patients have been personally interviewed when they could be traced and their own statements as to the success or failure of the operation and treatment taken. If they could not be found the statements of friends and their condition at the time of discharge from the hospital are noted.

A few words concerning methods of treatment and operative technique may not be out of place. First, we are much impressed by the preoperative methods employed by Crile, and as far as possible everything is shaped toward making the patient have confidence and feel the personal interest of those about him. Second, as far as is consistent with the treatment necessary and in accordance with hospital regulations, patients are allowed all the personal liberty possible and their wishes consulted in many ways. They are also encouraged to learn the use of the bed pan before operation which materially reduces the necessity for post-operative catheterization. Upon the admission of every patient the history is taken and physical examination made, which includes a hemoglobin and leukocyte count with other special examinations when necessary. At the conclusion of these examinations the evidence is weighed and the operation or treatment best adapted to the patient's needs is selected. After the patient has been placed in a good physical condition the preliminary preoperative treatment consists in thoroughly evacuating the bowels forty-eight hours before operation and then leaving them alone; the cathartic used being selected for each case depending upon the previous degree of constipation. A soft diet is given and the patient instructed to drink a large amount of water the day before, and a good night's sleep is insured by a mild hypnotic when necessary.

Locally the operative area is dry shaved, or if soapy lather is used the skin is allowed to dry after the shaving, then washed with alcohol and shortly after painted one coat of tincture of iodine, U. S. P., which is allowed to dry. No dressing is applied as it sometimes disturbs the patient and reminds him of the approaching operation. Furthermore our experience in wound healing shows this dressing to be unnecessary. After the anesthetic is administered the area is again painted with tincture of iodine, U. S. P., which is again allowed to dry, and the sheets placed. A clinic hypo of morphine, grains one-sixth, and atropine, grains one hundred fiftieth, is given each adult one-half hour before operation. Ether has been the anesthetic of choice and is preceded by the inhalation of a few drops of oil of orange for the psychic effect. For operations upon the face and mouth pharyngeal tubes connected with a Meltzer apparatus are used, which produce an even anesthetic, and offer much better opportunity for the surgeon to work. Nitrous oxid anesthesia has been used on special occasions, but only when administered by an expert. The anesthetist is asked to report the patient's condition frequently, and immediately if untoward symptoms develop. In abdominal work local novocain anesthesia (Crile's method) is used along with the general anesthetic, the urea and quinine solution being omitted. The use of this double anesthetic secures splendid muscular relaxation, thus permitting gentler work, which is extremely important in our opinion whether the full theory of the anoci-association is believed or not. An adequate incision is always made, especially in chronic cases, to permit of thorough exploration. Neglect of this caused much regret in one case of this series. During the operation salt solution is occasionally administered subcutaneously if the patient is dehydrated for any reason. This is especially seen in the cases of obstruction where vomiting has been present for some time. The catgut usually used is 0 or No. 1, double strands being employed when strength is needed. We have found the smaller sizes more easily absorbed and the tissue reaction less. This is true of both plain and chromic gut. The skin is closed with a subcuticular catgut suture, thus avoiding needle punctures in the skin which greatly improves the cosmetic result. When celluloid thread is used size 0 drawn through vaselin has been found the best, especially for intestinal work. The needles used are round and as small a size as can be readily threaded. For the skin a cutting edged needle is employed. In abdominal cases large gauze strips moistened in hot salt solution are used to pack off. These are counted at the end of the operation. No other type of sponge is allowed near the patient after the abdomen

is opened. Knife dissection of adhesions, absolute hemostasis and the covering of all raw surfaces, we consider especially important. If adhesions have been numerous we fill the abdomen with salt solution before the last suture in the peritoneum is placed. This procedure is purely empirical. However, it is well known that salt solution dissolves blood clot, and even for the short time it remains in the abdomen before absorption some good may be accomplished; and at least fluid is supplied to the patient. The same general technique is used for emergency cases as far as is practical.

The following points in post-operative treatment might be mentioned. We do not believe in Fowler's position as a routine measure. It is uncomfortable at best and we can see no reason for its use except when drainage is necessary. Even then we are inclined to place the patient on about six pillows and raise the head of the bed on blocks. Since adopting this procedure we have been very well satisfied with the results, and the patients do not complain as much. As soon as conscious, patients may have pillows, water, hot tea, coffee, or lemonade, as their fancies dictate. They are allowed to turn as soon as they desire, with the aid of a nurse. Sterile water by the rectum, Murphy's method, is not used as a routine, but only for patients who are in need of fluid. Morphine is used in sufficient quantities to keep the patient quiet and comfortable. Lately we have tried a combination of eserine and morphine, which is supposed to prevent post-operative paresis and meteorism. Our experience, however, is too limited to report definitely. We believe much of the more recent comfort has been due to larger incisions and greater gentleness in handling tissue. As soon as the patient complains of gas, a rectal tube is passed. If this does not relieve and it is within the first twenty-four hours, equal parts of sweet oil and milk of asafetida, per R, have been found very efficacious. Later one of the standard enemas is used or a cathartic, usually milk of magnesia, given the morning of the third day, followed by an ox gall enema in the afternoon. We employ every method, even allowing a patient with a short incision to sit or stand up rather than catheterize. We also have no arbitrary time limit but allow the individual to go until uncomfortable. If the use of the catheter is necessary, urotropin is given for two days.

Our drainage materials are the rubber tube, split rubber tube or oiled silk. Gauze is never used. In suppurative cases we are very partial to a large moist dressing consisting of a saturated solution of boric acid two-thirds, and glycerine one-third, the solution being poured through the dressing frequently enough to keep it moist. In clean cases the first dressing is done on the seventh or eighth day. The

adhesive strips are simply cut, dressing turned back, and wound inspected, after which the dressing is replaced until the twelfth day when it is discarded entirely. We never wash, handle, sponge, or permit frequent changes of dressings in clean wounds, for we feel after the incision is closed the less it is tampered with the better. Powders and ointments are also never used. When the drainage tube is employed we have found the best time for its removal to be the third day. If removed sooner local suppuration is usually not at its height, which frequently necessitates reopening the wound. However, if the tube is left too long, it has seemed to us local necrosis of bowel very frequently takes place, with a fecal fistula resulting. We have studied this quite carefully and feel our results have improved since adopting this method.

#### CLASSIFICATION AND RESULTS OF CASES.

*Amputations* for trauma and sepsis, nine cases.

Fingers and hand, five cases.

Toes, two cases.

Leg, one case.

Thigh, one case.

All of these patients recovered except one who entered in extremis, suffering from senile gangrene. A spinal anesthesia was selected and the patient given a hypodermic of pantopan preliminary to the spinal injection. The latter anesthetic was unnecessary as the patient rapidly became unconscious, death being undoubtedly due to the pantopan poisoning. So far as we have been able to trace these patients (six out of nine) all have good stumps, free from pain, and are well pleased.

Additional cases involving the extremities were re-amputation for painful stump and amputation for hammer-toes, both of which were successful. There were also two lacerated wounds of the leg, both of which recovered.

Our technique may be summed up as follows: First, crushed bone edges are cut square with a Gigli saw instead of a rongeur, which is so commonly employed. In septic cases circular amputation, the bone being cut flush with the skin and the wound left wide open, is the exclusive method employed. Second, lacerated tissues are removed. Third, hemorrhage is controlled. Fourth, a large moist dressing is applied and not changed oftener than every three or four days, unless the odor becomes objectionable. We are especially pleased with our resulting stumps, and the immediate and absolute control of sepsis in badly infected extremities. These results apply equally well to fingers, forearms, thighs, etc. Suturing is found to be poorly borne in these contused and infected tissues, and prevents drainage. Naturally the tissues have to be pushed back and the bones sawed at a higher level after a short time, us-

ually two to three weeks. However, this does not interfere with healing as no added incision or sutures have to be used.

#### FRACTURES.

Fractures, with results, were as follows:

Metacarpal, one case, good result.

Olecranon, one case, not operated, good fibrous union and functional result.

Both superior maxilla, teeth and nasal bones, one case, good result.

Inferior maxilla, one case, good result.

Clavicle, three cases, none of these patients could be found and all left the hospital before completely recovered.

Femur, neck, two cases, treated with abduction and extension, both good results.

Femur, shaft, two cases, treated by open operation, sawing and fitting the bone ends, both gave excellent results.

Tibia and fibula, three cases, one comminuted, operated, bones drilled and tied with catgut, very good result. One in aged man who died six weeks after injury with little attempt at repair. One non-union after six weeks of transverse fracture, Albee graft, discharged with good union, later report states graft has caused some trouble.

Pott's fracture, one case, excellent result.

Colles's, one case, good result.

Upper end of radius, one case, in an elderly woman to whom it was not thought advisable to give a general anesthetic, result was poor, motion limited.

Both radius and ulna, one case, treated by open operation, fair approximation secured, patient left the hospital before union was firm; seen later, poor functional result, much deformed.

Skull, vault and base, three cases; one compound, comminuted, depressed fracture, operated; perfect recovery. Second, fracture of base, died within two hours after admission, not operated. Third, decompressed, died the fourth day; autopsy showed all sinuses thrombosed with mixed infection, but no meningitis.

In selected cases of fracture of the skull or cerebral concussion without localizing symptoms, where intercranial pressure continues increasing to the danger point, our future method of decompression will be the removal of a button of bone from the posterior portion of both parietal bones and also making two trephine openings in the occipital bone over each lobe of the cerebellum, then incising the dura at these points. The advantage of this operative procedure is the rapidity with which it can be performed and the freedom from shock. In this class of case we have found the dura does not pulsate when uncovered, but upon incision a considerable quantity of bloody cerebro-spinal fluid pours out under marked pressure, and at this moment the anesthetist speaks of the immediate improvement in the patient's pulse, color and respiration. Pulsations are immediately re-established under the dura, and by this tech-

nique better drainage is given both lobes of the cerebrum and cerebellum than is the case when a subtemporal decompression is made. We have furthermore demonstrated that decompression in the parietal area does decompress the middle cranial fossa, and a plea is made for a further employment of this technique, which has not been described before to our knowledge. We also desire to call attention to another point of importance, namely, the openings are placed where a cerebral hernia, should one chance to develop, will do the least harm because of the remoteness from motor centers. Convalescence is also much shortened and return to consciousness quite rapid. Naturally this method is not used where focal symptoms are present or depressed fragments, etc., exist, but simply in the type where it is necessary to relieve increased intracranial pressure.

Cerebral concussion, four cases; three recovered, one not found.

In our operative work upon fractures, the use of plates, wires, nails, etc., or any other foreign material is avoided. If the points cannot be notched, drilled and tied with catgut, bone graft following Albee's technique is employed. We also urge that surgeons use greater care in applying plaster splints to be sure that they are firmly set before the patient is sent back to the ward, otherwise the fracture readily gets out of alignment. In fractures of the leg it has been our habit to sterilize the wire splint before operation and apply it before the wound is closed, so that there can be no separation of fragments from the after handling which is necessary in applying the usual splint. The wire splint is then incorporated in the plaster.

#### ABDOMINAL CASES.

*Appendicitis.*—Acute catarrhal, six cases, all recovered; five gave good results; one case not heard from. Lane's kink found once. One case complicated with empyema and lung abscess, drained twice and recovered after a stormy convalescence; patient had been under the influence of alcohol when taken sick and had been drinking freely for some time before.

Chronic cases, eight, three presenting ulcer symptoms. Results of the ulcer symptom cases, one is cured; one still has some of his old symptoms, according to friends, and is an alcoholic; the third case was not improved and was probably suffering from pulmonary tuberculosis, operation being refused until after most careful study, and then performed against our better judgment. Of the other five cases one is cured; two are very much improved; one could practically be considered cured, because she has a beginning right inguinal hernia, which accounts for the occasional attacks of pain; two were not improved; in one, cancer of the hepatic flexure, was overlooked owing to an inadequate incision and sufficient trouble being found with the appendix to account for symptoms; she left the

hospital and returned with obstruction symptoms six weeks later. The other is a young girl, highly nervous, marked scoliosis, who with her mother is eking out an existence after having been deserted by her father. She states she is no better.

We have found that usually constipation is not benefitted by appendectomy in chronic appendicitis, and that many of these cases are exceedingly difficult to diagnose. The patients are usually suffering from a combination of pathological conditions instead of just the appendix. Crile mentions a method which we intend to try, namely, place the patient in bed, have both sides firmly palpated every four hours, and in a chronic appendix frequently an acute attack may be precipitated, or local tenderness developed. It is necessary also to rule out stone in the right kidney, which is done by the history, symptom and X-ray; also pelvic conditions may frequently confuse the surgeon.

Gangrenous appendicitis, four cases; four recoveries; two at present well, two could not be traced.

Perforative appendicitis, with spreading peritonitis, two cases; one recovered and is well, one died. The one who died was an aged, sclerotic-looking man of forty-five, who had been vomiting fecal matter for two days before admission and was extremely sick.

Perforative appendicitis with localized abscess, two cases; two recoveries; in one, a young girl, the abscess cavity contained about a quart of pus, into which the appendix had evidently sloughed, as no appendix could be found in spite of careful search; second, a middle-aged man presenting a large, adherent, almost malignant feeling mass in the center of the abdomen, in which a small amount of pus was found; entirely recovered upon drainage alone.

*Gall bladder and ducts.*—Acute gangrenous cholecystitis, one case; cholecystectomy, drainage from cystic duct, complete recovery.

*Stomach and intestines.*—Intussusception, one case; infant; duration, twelve hours; origin, ileocecal valve; had traveled to splenic flexure; reduction and appendectomy; complete recovery.

Incomplete obstruction, one case; following severe sepsis from pelvic abscess. At operation a fistulous opening between the ileum and an ovarian cyst the size of an orange, and two other fistulous openings between loops of the ileum, were found. Intestines repaired, ovarian cyst excised, complete recovery.

Rectal fistula, one case; discharging through abdominal wall over left inguinal region; seven years' duration, following typhoid; several previous operations, the last several months before; multiple openings in rectum, attempt at repair; condition serious; patient lost ground rapidly, markedly emaciated and septic. Operation, rectum loosened on either side and invaginated on tube; collapsed on table and died two hours later.

Resection of descending colon, one case; his-



tory of exophthalmic goiter seven years ago, following administration of KI for hay asthma, patient having a moderate sized thyroid enlargement; refused operation until in extremis; thyroidectomy, Dr. Park; improved for a year; median lobe enlargement ligated twice during next year, marked improvement; acute abdominal symptoms two years later; appendectomy, cholecystectomy, over eighty stones removed; improved for a year, then metrorrhagia with heat flashes, tachycardia, etc.; vaginal hysterectomy; marked improvement. Constipation became very marked five months before present operation, bismuth meal staying two weeks and plate showing apparent obstruction at splenic flexure, with dilated cecum; descending colon and sigmoid redundant; resection of about a foot of descending colon, lateral anastomosis, infolding of cecum; did well until the seventh day leakage occurred and death. We did not want to operate this patient in spite of X-ray findings, because the symptoms were not of obstruction but atony, and we doubt if any improvement would have resulted. Everything medically had been tried, however.

*Miscellaneous abdominal.*—Tubercular peritonitis, ascitic form, one case; focus not found because of extent of disease; fluid removed, abdominal cavity irritated with gauze and filled with salt solution. Good recovery.

Pseudo-pancreatic cyst, one case; three weeks after trauma developed slowly, giving acute symptoms about six weeks after injury; drainage for a month, recovery.

Extra-uterine pregnancy, one case; woman entered hospital in extremis; abdominal distention, vomiting; diagnosis, septic peritonitis, origin not known; operation, hard mass found under liver, at site of gall-bladder, which proved to be a macerated, three or four months' fetus; rupture taking place from the left tube, septic peritonitis everywhere, patient died on table. Postoperative note.—Patient and husband both refused to give any information concerning patient's previous history, except that she had been ailing for nearly a year.

Gunshot wound, abdomen, one case; woman, morphin fiend, loaded single shot rifle and shot herself three times in the abdomen high up on left side; laparotomy, two perforations of mesentery, while the third bullet cut the wall of the splenic flexure down to mucous membrane. Intestinal laceration closed with purse-string suture and openings in mesentery repaired. Recovery after marked suppuration of abdominal wall.

*Hernia.*—Inguinal, two cases; two recoveries, one has a hydrocele. This patient had an exceedingly thick sac and a very large hernia. Sac, when cut into, seemed to contain muscle fibers. Suspected hernia of bladder found not to be the case; excised and hernia treated in usual way; section of sac showed inflammatory reaction.

Ventral hernia, postoperative, one case; Mayo overlapping operation, good recovery.

*Rectum.*—Fistula extending above internal sphincter, one case; inflammatory area very large with many ramifications; inflammatory tissue excised and attempt made to close wound tight; pronounced suppuration, wound opened later and treated with packing, practically well.

Hemorrhoids, three cases; excised by clamp and cautery, good recovery.

*Genital-urinary system.*—Nephrolithiasis, one case; stone in calyx of left kidney, removed, good recovery.

Nephrectomy, one case; for septic (Brewer) kidney, young girl, good recovery.

*Suprapubic cystostomy.*—With umbrella catheter, two cases; first, elderly man, extravasation, marked infiltration of scrotum and numerous fistulae, stricture causing obstruction, drainage until fistulae closed and urethra could be dilated. Present condition, stricture still causes considerable trouble, otherwise considerably improved. Second, complication in elderly man following operation for large hydrocele. Patient had a large prostate. Several attempts were made by intern to catheterize, which failed. Spasm and bleeding very marked. Catheter could not be passed. After drainage patient made good recovery and is at present well.

Hydrocele, one case; just referred to; Andrew's operation turning sac inside out, good recovery.

Spermatocele, one case; excised, recovery, still complains of pain in urethra; has enlarged tender prostatic lobe and is under treatment.

Drainage of epididymis for acute gonorrheal epididymitis, one case; no pus found, pain relieved and convalescence shortened.

Partial circumcision, one case; phymosis, carcinoma of penis found, confirmed by section. Patient referred to Gratwick for X-ray, discontinued treatments. Seen at home, condition the same; promised to submit himself for further treatment, but has so far not appeared. Amputation refused.

Acute retention due to stricture and perineal abscess, one case; perineal section, bladder entered with difficulty. Excellent recovery; Urethra shows no stricture.

*Syphilis.*—Periostitis following trauma, two cases; one tibia, young man, Wassermann negative, denied lesion, section from tibia removed for examination, negative, shaft of bone normal, much improved upon specific treatment; left hospital and cannot be found. Case two, young woman stabbed in hip with pocket-knife, leaving piece of broken blade sticking in great trochanter of femur; blade removed by Dr. McGuire in previous service. Returned with necrosis, cleaned out, removing more bone. Again returned, same condition and considerable induration of soft tissue. X-ray showed more necrosis and careful history showed previous treatment in another

hospital for specific trouble. Wassermann negative. Thigh opened extensively, soft tissues drained, antisyphilitic treatment, slow but permanent recovery. Died recently from inhaling natural gas from a defective stove.

*Ulcers.*—Syphilitic ulcer of leg, one case; involving practically the entire lower half; patient had not walked or done her work for nearly three years. Ulcer at present practically healed, now the size of a 25-cent piece; induration rapidly disappearing; can walk and do her housework.

Varicose ulcers, two cases; both treated by Adam's ambulatory method, getting ulcer clean, grafting thin sections of sponge, dry, sterile gauze, and supporting starch bandage. Patients then allowed to be up and about. One healed, the other much smaller when last seen. Dressing changed once a week.

Large ulcer of chest following slough, the result of salt solution in young man suffering with nephritis. Plastic operation, unsuccessful, finally healed.

*Gunshot Wounds.*—Hand and forearm, one case, included under finger amputations. Entirely recovered except in palm, where there is a considerable scar due to extensive laceration of soft parts, which is somewhat painful.

Buttocks, one case, recovery.

*Miscellaneous Cases.*—Laceration of soft palate caused by falling with stick in mouth, one case, recovery.

Uni-lateral hypertrophy of normal parotid gland, one case; baby, six months' old, which presented a swelling in the region of the parotid gland since birth, thought to be branchial cyst. At operation a large normal parotid gland was exposed. Section removed for examination. No pathological condition found. Wound closed. No change.

*Cancer.*—Breast, two cases; one radical operation, Jackson incision, good result so far. Second, foul sloughing epithelioma the size of fist in aged woman; removed with actual cautery under novocain. Area granulated, practically healed. Edema of arm, which was present before, persisted. Patient died from chronic interstitial nephritis, heart, etc., four months later; no local recurrence, though undoubtedly the edema was due to metastasis.

Carcinoma of cervix, one case; woman aged twenty, Percy cautery treatment twice, refused further treatment, died several months later from repeated hemorrhage. Autopsy: Carcinoma was relatively small and no metastases were found. Left pyonephrosis present and fistulous opening between vagina and rectum.

Recurrent epithelioma of the antrum, one case; did well for about six weeks, then recurred.

*Empyema.*—Two cases; one recovered, already referred to as complicating an acute catarrhal appendix; patient under the influence of alcohol, appendectomy about six hours after the onset of symptoms. Leukocytes were 4,000. Thorax

drained three times and recovered. Case two, large fleshy woman, middle aged, in extremis. Empyema followed lobar pneumonia, drainage under novocain; died suddenly next morning.

The special points we wish to call attention to are the treatment of badly infected extremities by what we call the open method of amputation, and to make a plea for a trial of the method suggested for increased intercranial pressure without focal symptoms.

## TWILIGHT SLEEP IN OBSTETRICS.— WITH A REPORT OF 200 CASES.\*

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and  
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"IN sorrow thou shalt bring forth children." Disregarding the teachings of divines and theologians, attempts have been made from time immemorial to alleviate the suffering of woman in the hour of her travail. We take it for granted that medically and ethically there can be no objection to the lessening or the relieving of the pains of the parturient. Indeed we conceive it to be the duty of the physician to bring relief and diminish the suffering of womankind, be it during parturition or at any other time, provided that the relief is not followed by any deleterious effect.

We shall not linger to recount the various means used and methods tried to lighten the sufferings of the parturient woman in this, most interesting and important hour of her existence. We only wish to refer to the introduction of chloroform into obstetric practice in 1848; to the strong opposition to its use by the medical profession; to the virulent discussions it gave rise to; and to its immediate and widespread popularity after having been used in 1853 to deliver Queen Victoria of her first born. "Chloroform a la reine" had a widespread but short existence. It is not necessary for me to call the attention of medical men to the shortcomings and dangers of this method in obstetric practice.

The relief of pain by the induction of sleep is a recognized mode of treatment. Among the sleep-producing drugs morphin and scopolamin stand highest in the scale. The poisonous actions of these drugs are manifested in different directions. Morphin causes respiratory paralysis, whereas scopolamin produces heart failure. Investigations have demonstrated that if the two narcotics are given together the sleep-producing effect is greater than the sum of their individual action, provided they belong to groups that are not chemically related. In obstetric practice it is not necessary, as is the case in surgical operations, to produce deep narcosis. The pain of labor is bearable, and to relieve it only moderate

\*Read at the Annual Meeting of the Medical Society of the County of Westchester, November, 1914.

slumber or semi-consciousness is required. If this is borne in mind no danger from cardiac or respiratory failure is likely to result.

#### SCOPOLAMIN AND HYOSCIN.

The unsatisfactory results obtained in the early days with twilight anesthesia is attributable in a large measure to the impurity and unreliability of the preparation scopolamin and hyoscin. Confusion still exists in the minds of many physicians as to the source and identity of these alkaloids.

The product  $C_{17}H_{24}NO_4$  was obtained first by Reichardt and Hohn in 1871. Its exact chemical formula was first established twenty years later. Until 1894 the alkaloid was isolated from the seeds of *hyoscyamin niger*. Since then *scopolia* root became utilized as a source of supply. Although the alkaloids derived from *hyoscyamus* seeds and *scopolia* root were considered identical, the name hyoscin was applied to the product obtained from *hyoscyamus* seeds, and the name scopolamin was applied to the base isolated from *scopolia* root.

Since 1898, however, the terms scopolamin and hyoscin were used interchangeably without any regard as to the source from which the alkaloid was derived. In 1910 the German pharmacopia adopted the term scopolamin hydrobromid with a specific rotatory power of 24 to 25 as a test for its identity and purity. In England the terms scopolamin and hyoscin are used interchangeably. The present tendency, however, is to apply the term scopolamin hydrobromid to the product giving a *levo* rotatory power of between 24 to 25, while hyoscin hydrobromid is used to designate a salt having a weaker rotatory power. In the United States the term hyoscin hydrobromid is still given preference, although practically all the salt is being imported from Germany and is largely of a *levo*-rotatory variety.

Scopolamin is an ester of tropic acid and the base scopolin and may exist in three isomeric forms. Two of these, the *levo* and *recemic* forms, are known. The isomers differ in their physiological actions as well as in their chemical and physical properties. The *levo* isomer is the one used in medicine. The biological tests for the isomers are difficult and the pharmacopial tests are unreliable. The most accurate indicator as to the purity of the drug is its specific rotatory power. The rotatory power of a good preparation lies between  $-24$  and  $-25$ . Precautions must be taken against alkalies coming in contact with the preparation, because even the weaker alkalies convert the *levo* into the *recemic* isomer. Solutions of the preparation gradually deteriorate, even when preserved in sterilized ampules. This occurs through saponification of the ester of tropic acid. To guard against this occurrence, alcohol-mannit, a sugar of the sixth power, may be added to the solution. A ten per cent solution of this sugar has been found to answer the purpose best. It is non-irritating

when injected hypodermically and preserves the solution for years.

#### MORPHIN, PANTOPON, NARCOPHIN.\*

The other ingredient, morphin, used in the production of semi-consciousness is not only a narcotic but has also marked analgesic properties. Opium, from which it is derived, has advantages of a quantitative and also of a qualitative character over it, but it has the shortcoming that it cannot be administered by hypo. A preparation purified of the resins and other insoluble ingredients and capable of hypodermic use has been introduced under the trade-name "pantopon," and has been used with advantage as a substitute for morphin in the production of twilight sleep. Opium contains about twenty alkaloids, but the desirable properties are due chiefly to morphin and to narcotin, an almost inactive preparation. Narcotin exists in opium or pantopon in variable quantity from 1 to 10 per cent. Its marked influence in changing the character of the action of morphin when given in combination is demonstrated by the following example. In cats, the administration of morphin causes excitation and even convulsions; however, when combined with narcotin, drowsiness and sleep results. The combination that gives the optimum result is equal parts of morphin and narcotin.

Narcophin is a recent chemical combination of equal parts of morphin and narcotin, held together by the double-barred inactive mecomic acid also existing in opium. Narcophin is not only a stronger narcotic than morphin but it is also a more powerful analgesic. Its action is also of longer duration. Its chief advantage, however, lies in the fact that it is less poisonous to the respiratory center. The main objection to the use of morphin in twilight anesthesia, fetal asphyxia, is thus met by the substitution of narcophin. Other advantages of the preparation are the absence of vomiting, absence of uterine and intestinal atony, absence of a benumbing effect on the higher cerebral centers. Solutions of narcophin rapidly develop moulds. To preserve the solutions from contamination it is necessary to add to them chloroform or boric acid.

The use of morphin and scopolamin alone or in combination for the relief of the suffering during parturition is not new in America, but the practice of twilight sleep on this side of the ocean is of recent date. The term "Twilight Sleep" was coined by Gauss of Freiburg and stands for a distinct and definite state. By twilight sleep is meant a condition of drowsiness, so light that even slight stimuli will arouse the individual out of slumber, sleep setting in as soon as the stimuli are removed. The stimuli may be those affecting the special or sensory nerve endings. The painful irritations of labor are an unavoidable concomitant of parturition, but all

\* Narcophin may not be quite as eupheneous as narcophen, but I prefer the latter termination because it is in uniformity with the terminations in the words narcotin and morphin.

other stimuli, such as noises and bright lights, may be excluded. A darkened, sound-proof room is a great aid in the production of a successful twilight sleep.\*

To attain this condition of drowsiness known as twilight sleep, and not to pass into the boundaries of deep slumber, a proper technic is required. The failures experienced by others with the use of morphin and scopolamin are due, in the first place, to the lack of a clear notion as to the object to be attained, and, in the second place, to the absence of a proper technic. The technic evolved in Freiburg, known as the memory test, is employed by us to determine whether the proper degree of narcosis has been reached or not. This is a simple, very fine and effectual indicator as to the depth of narcosis and, at the same time, permits a fairly wide range between wakefulness and deep slumber. The procedure is as follows: A patient is shown an object, say a Teddy-bear; she is asked what she sees and replies, "A Teddy-bear." Fifteen minutes thereafter, the patient is shown the same object, and asked if she saw it before. On replying, "No," or that she saw it a day or a week ago, we infer that she is sufficiently under the influence of the drugs and we conclude that she no longer recognizes objects. However, upon further questioning as to what she sees and her replying, "A Teddy-bear," we see that the patient is sufficiently conscious to recognize objects, though no longer retaining recollection of them. In other words, she is no longer in a condition to apperceive, though she still perceives. The patient may experience pain, though in a greatly diminished degree, but the impressions are not retained. They fade out as quickly as they are made. The memory test is applied at frequent intervals, say every half or three-quarters of an hour. If attempts are made to obliterate all response to painful stimuli, not only will labor be checked, but dangerous symptoms may manifest themselves. Those who do pelvic surgery know how easy it is to excite a reaction even during inhalation anesthesia by irritating the pelvic ganglia. The first effect of morphin and scopolamin on the mother is the production of slumber. Symptoms of poisoning occur after the stage of deep narcosis is passed. In none of the two hundred cases have we noticed any ill effect on the mother. Gauss, in a series of five thousand cases, has not had a single death that could be attributed to the treatment.

The two drugs used by us are put up as follows:

Solution 1.—Narcophin, 3 per cent; aq. chloroform, q.s.

Solution 2.—Scopolamin hydrobromid, 3 per cent; mannit, 10 per cent; aq. destilata, q.s.

The treatment is begun as soon as the pains occur at regular intervals and discomfort is felt.

\* Plugs of cotton soaked with oil may be inserted into the ears to exclude noises, and a bandage over the eyes may be used to exclude light.

The first three injections are given at intervals of three-quarters of an hour apart; subsequent injections are given every hour and a half. As stated above, memory tests are regularly made to determine the condition of the patient, and we are guided more by the patient's amnesia than by the intervals elapsing between injections. At the Jewish Maternity Hospital it is customary to employ only one injection of narcophin. We rather prefer to repeat half the original dose every six hours, and feel safe in doing this; first, because narcophin, unlike morphin, has only a mild depressing effect on the respiration, and, second, because in six to seven hours the effect of the narcophin has worn off. If given, however, at shorter intervals, oligopnia bordering on asphyxia of the child may develop.

Below are cited several cases under twilight treatment. The first is illustrative of a normal case, typical of a successful "twilight." A case of persistent occiput, and one of breech presentation are also given. There is also cited a case where labor was terminated by forceps after having reached the perineal stage. Finally, there is given the shortest as well as the longest case of "twilight" under our observation.

Case 104, typical "twilight."

R. W., age 24, primipara.

Aug. 18, 1.40 A. M.; ext. os two fingers, membranes (?), head engaged, R. O. A., pulse 76, respiration 22, fetal heart 140-160; pains every four minutes of half-minute duration.

First injection 1.50 A. M.; scopolamin 1.5 cc., narcophin .5 cc.

At 2.30 A. M. patient drowsy; at 2.50 A. M. pulse 90, respiration 24, fetal heart 130-160; pains every three minutes of half-minute duration.

Second injection 2.50 A. M.; scopolamin .5 cc.

At 4.20 A. M. pulse 90, respiration 24, fetal heart 140-160; pains every four minutes.

Fifth and last injection 6.20 A. M.; scopolamin .5 cc.

At 7.20 A. M. patient receives pituitary extract 1 cc.

At 8.05 A. M. birth of child; cries immediately.

Patient in complete amnesia from 4.30 A. M. until she woke at 2.30 P. M.

Case 178 shows a very good case of "twilight," where a low forceps was required.

M. M., age 27, primipara; highly intelligent but very sensitive and excitable. Inlet of pelvis normal; symphyseal angle at outlet very acute.

Oct. 7, 6 A. M., labor pains began; 11.30 A. M. ext. os one finger, membranes intact, head at brim, L. O. A.; pains every five minutes.

First injection 11.30 A. M.; scopolamin 1.5 cc., narcophin 1 cc.

Second injection 12.30 P. M.; scopolamin .5 cc.

Third injection 1.25 P. M.; scopolamin .5 cc.

Fourth injection 3.00 P. M.; scopolamin .5 cc.  
Fifth injection 4.00 P. M.; scopolamin .5 cc.  
5.55 P. M., delivery by forceps.

Patient had good strong uterine contractions and bore down with the abdominal muscles. Catup was showing; the sagittal suture was in the oblique diameter, but the head did not rotate on account of an obstruction at the symphyseal angle. A few drops of ether was administered and a low forceps applied, very slight tear of the perineum resulting.

The patient was under the full effects of the drugs at 12.45 P. M. She half woke at 7 P. M., fell into a slumber again and continued to sleep until 10 P. M. She did not remember anything of what had occurred from twelve o'clock noon until seven o'clock in the evening.

Case 162, *occiput posterior*.

B. C., age 19, primipara.

Labor pains began at midnight, Sept. 25th. 4.30 A. M. ext. os  $2\frac{1}{2}$  fingers, membranes intact, head engaged, L. O. P.

First injection 4.30 A. M.; scopolamin 1.5 cc., narcophin 1 cc.

Subsequent injections each of .5 cc. scopolamin were given as follows: 2nd at 6.15 A. M., 3rd at 7.10 A. M., 4th at 8.10 A. M., 5th at 9.10 A. M., 6th at 11 A. M., 7th and last at 12.30 P. M. At 1.22 pituitary extract 1.5 cc. was given. At 1.40 P. M. birth of child as a persistent occiput; no laceration; amnesia complete.

Case 188, contracted pelvis, breech presentation, premature rupture of membranes.

I. K., age 25, primipara; interspinous 22, intercrystal 25, intertrochanteric 29, C. D.  $9\frac{3}{4}$ , C. V. 8 puls.

Oct. 16, 1 A. M., rupture of membranes; 6 A. M. labor pains began; 10 A. M. ext. os one finger, breech R. S. A.

1.40 P. M. scopolamin 1.5 cc., narcophin 1 cc.

Subsequent injections each of .5 cc. scopolamin were given as follows: 2nd at 2.40 P. M., 3rd at 3.45 P. M., 4th at 5.10 P. M., 5th at 6.30 P. M., 6th at 7.45 P. M., 7th and last at 9.30 P. M. Birth of child at 10.25 P. M.; expulsion of placenta at 10.45 P. M.; weight of child 6 lbs. 5 ozs. The breech was delivered spontaneously; the arms were delivered according to Müller's technic; the head was delivered by Smellie-Veit and pressure from above; there was only a mucous tear; no inhalation anesthesia was employed.

Patient came under the influence of the drug at 3 P. M.; she woke at 2 A. M., continued to sleep until 6 A. M., when she learned that she gave birth to a girl.

Case 155, shortest successful twilight.

E. L., age 27, para VI.

Sept. 20, 10 P. M., ext. os four fingers, membranes intact, head engaged.

First injection 10.10 P. M.; scopolamin 1.5 cc., narcophin 1 cc.

Second injection 10.40 P. M. At 11 P. M. birth; amnesia successful.

Case 138.

K. R., age 21, para I.

Sept. 11, 12.20 A. M., ext. os two fingers, cervix thick, membranes intact, head not engaged.

First injection 12.30 A. M.; scopolamin 1.5 cc., narcophin 1 cc.

The subsequent injections of scopolamin, each of .5 cc., were given as follows: 2nd at 1.25 A. M., 3rd at 3.00 A. M., 4th at 4.30 A. M., 5th at 6.30 A. M., 6th at 8.00 A. M., 7th at 9.30 A. M., 8th at 11.30 A. M., 9th at 1.20 P. M., 10th at 3.20 P. M., 11th at 4.20 P. M., 12th at 5.20 P. M., 13th at 6.30 P. M., 14th at 8.55 P. M., 15th and last at 10.30 P. M. Sept. 12th, 2.00 A. M., small amount of ether administered, episiotomy performed, child 9 lbs. 12 ozs. delivered by medium forceps; child oligopnic; amnesia complete for more than 24 hours. In addition to the first injection of narcophin, 1 cc. of the latter was administered Sept. 11th at 7.30 A. M. and at 9.05 P. M. One cc. of pituitary extract was also administered Sept. 11th at 3.30 P. M. and another cc. at 8.55 P. M.

Our results with two hundred cases were as follows: One hundred and sixty-six, or 83 per cent, had complete amnesia; seventeen, or  $8\frac{1}{2}$  per cent, had marked analgesia without amnesia; seventeen had no amnesia and but slight, if any, analgesia, in two cases, or one per cent, because treatment was discontinued; in fifteen, or  $7\frac{1}{2}$  per cent, because labor was too far advanced for effective treatment (mostly multiparae) or because of some idiosyncrasy.

THE INFLUENCE OF THE TREATMENT ON THE PROGRESS OF LABOR.

Expulsion of the fetus is due to a combination of involuntary contractions and voluntary effort and resembles in this respect the behavior of the intestines. The action of the uterine muscles is involuntary and is influenced but little by the treatment. When dilatation is complete and the fetus has entered the vaginal tract, the voluntary muscles are set into play to assist in the expulsion of the fetus. The woman bears down. The woman in "twilight sleep" is not always conscious of a desire to empty the vaginal contents, and therefore fails to bear down, and when she does, the act is rather reflex than voluntary and therefore not quite as effective. There is, therefore, a delay at the perineal stage. For the same reason she forgets, or even fails, to empty the bladder and it may be necessary to catheterize her more often than is the case during ordinary parturition.

The lack of voluntary effort may be compensated for by increasing the uterine contractions through the administration of pituitary extract. The woman may also be urged to bear down, and she will, in many cases, do as directed. How-

ever, the slow progress at the perineal stage is not altogether a disadvantage. The lower vaginal tract stretches very gradually and the results are marked by fewer and far less severe lacerations of the perineum than is otherwise the case.

We have seen that if the two drugs are administered in small doses no harm results to the parturient woman. We must not, however, lose sight of the fact that the young are very susceptible to the influence of opiates and that even the minute amounts that reach the fetus through the placental circulation may have an untoward effect on the child. In untreated cases asphyxia in the new-born is generally due to respiratory failure, the heart continuing to beat for some time. Reasoning *à priori*, one would conclude that of the two drugs employed in the production of twilight sleep special care should be taken not to use excessive amounts of the morphin preparation, the drug that has a special predilection for the respiratory center. Gauss has demonstrated that apnea and asphyxia is due to overdoses of morphin in the combination scopolamin-morphin and, furthermore, that large doses of morphin are not necessary for the production of "twilight," and that the ill effect on the child can be entirely eliminated by employing small amounts of the latter drug. He has further proven that if large or repeated doses of morphin alone are employed, deep apnea results, even when progress of labor is not interfered with. On the other hand, the inference that scopolamin alone may be used effectively is not borne out in practice, for if sufficiently large doses of scopolamin are used at the first injection to make up for the absence of the morphin, the child comes to the world in a deeply intoxicated condition, even before the mother has passed under the full effect of the drug.

Gauss considers the condition of the new-born as the finest indicator as to the correctness of the doses employed. On the other hand, the grade of consciousness of the mother will determine, beforehand, the condition of the child. Our results have improved considerably since the introduction of narcophin as a substitute for morphin. They are as follows: One still birth, with slightly macerated skin; three cases of asphyxia, one of which was resuscitated after twenty minutes; another died of edema of the glottis after twelve hours, and the third died after one and one-half hours due to faulty development. One hundred and sixty-eight were normal children under no influence of any drugs. Thirty (14.7 per cent) were born under the influence of the drugs and were oligopnic. Dr. Gauss describes oligopnia (delayed breathing), or the condition of the new-born under the influence of the drugs, as follows:

"The new-born breathes immediately after birth with either a loud or stifled cry and often remains lying motionless, although sometimes moving its limbs. The heart beat continues ac-

tive. From time to time a short respiration occurs, so that as a consequence of the accumulated carbon dioxide and lack of oxygen, the child presents a picture of varying degrees of cyanosis. At the same time, it opens its eyes spontaneously, to close them immediately thereafter in a slow and tired fashion."

Gauss continues: "Especially characteristic of this intoxicated condition is the following: The children react briskly to stimulation, but the reflexly provoked muscle reaction often becomes suddenly interrupted before its complete accomplishment, as if the completion of the intended motion was suddenly forgotten. The heart action during this time depends upon the character of the breathing. As the time between the last respiration and the next increases, the fetal heart sounds become less frequent, until they sink to 60 beats, to return to the normal with the next respiration. This phenomenon recurs again and again in steadily decreasing intervals until spontaneously or through the influence of external stimuli the breathing becomes regular, rhythmical respiration begins, and the children do not vary from the normal."

We have practiced twilight anesthesia both at the Jewish Maternity Hospital and outside of the latter institution since November, 1912. Our information is based on a knowledge of approximately 270 cases. The present report, however, is limited to an analysis of 200 cases treated at the Jewish Maternity Hospital during the period comprised between June 15, 1914, and October 22, 1914. During this period the facilities at the hospital were very favorable for the administration of twilight anesthesia. The institution had secured the services of Dr. Schlössing of Kroenig's clinic, who, in the earlier cases, administered the treatment personally, and later instructed and supervised the house staff. With the improved surroundings and acquisition of the services of men trained in the administration of the treatment, the results have improved correspondingly.

Included among the cases in which treatment was carried out are two of chronic endocarditis and two of nephritis with threatened eclampsia. The former went through labor without shock or stress. Of the latter, one terminated an hour after delivery in convulsions. However, the patient made a rapid and uneventful recovery. In three cases treatment was discontinued: (1) on account of an unpleasant effect on the mother; (2) on account of primary inertia associated with a mal-presentation in a contracted pelvis; (3) on account of an unfavorable influence on the fetal heart sounds. The cases are cited below.

#### Case 114.

M. B., age 20, primipara; debilitated, anaemic-looking woman.

Aug. 24, 5 A. M., labor pains began; 7.50

A. M. ext. os two and a half fingers, head engaged, pulse 64, respiration 26, fetal heart 134.

First injection 7.50 A. M.; scopolamin 1.5 cc., narcophin .1 cc.

Second injection 8.50 A. M.; scopolamin .5 cc.; pulse 68, respiration 35, shallow, sighing; fetal heart 138. At the end of 40 minutes respiration became normal.

Third injection 9.50 A. M., scopolamin .5 cc.; pulse 80, respiration 28, fetal heart 152. At the end of ten minutes the respiration again became sighing and continued for nearly three-quarters of an hour. Treatment was discontinued on account of the anomalous breathing. At 12.45 P. M. birth of child. Amnesia is successful in spite of discontinuance of treatment.

Case 188.

F. L., age 26, para I. Diagonal conjugate 10 minus.

Oct. 11, 7 P. M., rupture of membranes; 10 P. M. labor pains began. Oct. 12, 5.45 A. M., ext. os two fingers, head at brim, L. O. P.

First injection Oct. 12, 5.45 A. M.; scopolamin 1.5 cc., narcophin 1 cc.

Second injection 6.50 A. M.; scopolamin .5 cc.

Third injection 8.00 A. M.; scopolamin .5 cc.

Fourth injection 9.30 A. M.; scopolamin .5 cc.

Treatment discontinued on account of primary inertia and dry labor in a contracted pelvis with mal-presentation. Oct. 14, 4 P. M., delivered by high forceps of a living child.

Case 194.

J. H., age 24, para I.

Oct. 21, 9 P. M., mother's pulse 100, respiration 22, fetal heart sounds 150.

First injection 9 P. M.; scopolamin 1.5 cc., narcophin 1 cc.

9.15 P. M. fetal heart sounds 180. 10 P. M., fetal heart sounds 200.

Oct. 22, 1 A. M., birth of living child spontaneously, cord once around the neck, a great deal of meconium present in the liquor amnii. Fetal heart sounds immediately after birth 200.

It was the opinion of the attending physician that the fetal heart sounds were becoming more frequent independent of the treatment, but it was thought best to discontinue.

Of the two hundred and two cases referred to there were one hundred and fifty primiparae, and fifty multiparae. Two hundred and two children were born; one hundred and ninety-eight were single births and two were twins. Of the single births one hundred and ninety-six presented by vertex and two by breech; of the twins, in one case both children presented by vertex and in the other case the second child came breech first.

Interference was required 23 times. In one case there was a breech extraction. Medium forceps was used in four cases, or less than two per cent. Low forceps was used in 18 cases, or less than nine per cent. This already includes two cases of forceps that were performed on ac-

count of excessive uterine contractions following the use of pituitary extract.

Lacerations of the perineum were strikingly reduced both in number and degree. In 200 consecutive cases, 75 per cent of whom were primiparae, we had only one severe laceration of the perineum. This was a tear down to the rectum caused by medium forceps operation by one of the younger men. The patient was discharged on the seventeenth day; perineum healed by primary union.

In our series hemorrhage was conspicuous by its absence. We did not have a single case of severe bleeding. This may be due to one of several reasons. First, because 75 per cent or more of the cases received pituitary extract towards the end of the second stage. It may be due to the fact that manipulation and major interference was diminished. It may, however, be a simple coincident, or it may be due to some other unknown cause.

Involution is not interfered with; it may even be promoted. The secretion of milk is not diminished except that congestion of the breasts seems to be delayed about twenty-four hours.

Slight restlessness is occasionally present. Mild degrees of mania are rare and may be easily controlled; early in the treatment by reducing the dose, and later in the treatment, the time it is most likely to occur, by the addition of another dose of narcophin.

Thirst is present in most cases, but is rarely marked or troublesome. We let our patients have all the water they care to drink. Vomiting was present in only three cases. Headache was never complained of.

The bladder should be watched. It may be necessary to catheterize it from time to time; otherwise progress of labor may be interfered with. We have also found it beneficial to give the patient a warm enema when the head is at the outlet. It is both an aid to cleanliness and helps the further progress of labor. During the lying-in period the bowels are active and the bladder functionates normally. We have not noticed any interference with the third stage of labor.

It has been our practice for the past two years, unless there were some definite contraconditions, to let all our patients sit up in bed at the end of twenty-four hours, and to let them out of bed for fifteen minutes on the third day after confinement. We have found this practice a comfort to our patients and a satisfaction to ourselves. However, many of our patients were surprised when permission to do so was given them, and some seemed to doubt the wisdom of the practice. The cases that have received "twilight," in contradistinction to the ordinary cases, will frequently ask, the day after confinement, for permission to get out of bed. They feel so fine.

Crile has demonstrated that the three most important factors concerned in the causation of

shock are violence, insomnia and anxiety. The latter two elements can be eliminated by the induction of twilight sleep. The elimination of these depressing factors plays as important a role in the recuperation from childbirth as it does in the recovery from a surgical operation. These depressing influences produce microscopic changes in various organs. With the removal of the original cause these changes apparently disappear, but that some of the changes are permanent would seem reasonable to believe.

One hundred and ninety-eight mothers were discharged from the eighth to the fourteenth day in good condition. One mother remained until the seventeenth day on account of injury to the perineum. One mother was transferred to another institution on account of insanity she developed on the fourth day of her puerperium. She gave a history of having had several previous attacks.

Of the two hundred and two children born, one hundred and ninety-five left the institution in good condition. One child was discharged in a weakened and anaemic condition on account of melena neonatorum. It was treated with horse serum when hemorrhage was active, and recovered good health in a few weeks. Six children were lost: (1) One was still-born; the skin was macerated in patches. It was a case of hydramnion. The house surgeon claims to have heard the fetal heart sounds an hour and a half before birth. (2) In one child cardiac pulsation continued for an hour and a half and attempts at respiration would occur with each introduction of a catheter into the trachea. Autopsy revealed a defect on the left side of the diaphragm, a rudimentary left lung, the left side of the thorax occupied by the stomach, large and small intestines and spleen, and the heart transplanted to the right side. (3) One child died several hours after birth with signs of cerebral hemorrhage. No autopsy. (4) One child died from edema of the glottis twelve hours after birth. No autopsy. (5) One child died five hours after birth; it was a premature birth, with a spina bifida. (6) One died five days after birth from melena neonatorum. It came from a family of bleeders.

#### CONCLUSIONS.

(1) The treatment is safe, both for the mother and child.

(2) The treatment is especially to be recommended for primiparae. Not only does it save them the agony of a difficult labor, but it also protects them against unnecessary interference on the part of the physician, due to the pleadings of the patient and family.

(3) In multiparae, it is a question whether a rapid labor, brought about by the administration of minute and repeated doses of pituitary extract, and the pangs of labor relieved by a dose or two of narcophin, is not to be preferred. However, this should be left for the patient to decide.

(4) The treatment is best carried out in a hospital where there is a staff trained in the method.

(5) In private practice, it resolves itself into a question of finances. The surroundings must be favorable. A trained nurse, experienced in the treatment, is a requisite. It is also advisable to have a medical assistant, as well as an assistant nurse. The physician in charge must be within reach. His compensation must be commensurate with the services rendered.

(6) The treatment does not render the care, attention and watchfulness on the part of the attending physician less, but rather increases his labors and makes his work more difficult and complicated, and his responsibilities greater.

(7) Fetal heart sounds must be watched carefully and pulse and respiration of the mother, as well as her general condition, including her state of consciousness, must be observed constantly.

(8) The method is not adapted for the general practitioner, but should be practiced only by those who devote themselves to obstetrics.

(9) It should be practiced only by those who have watched a fair number of cases, say ten, from beginning to end, and have thoroughly familiarized themselves with the practical points in the treatment.

(10) It may develop a number of young anesthetists, specially trained in the administration of the treatment.

(11) Pure drugs are indispensable, and attention to all details in the management of a case is essential.

(12) Anamolies of labor do not interfere with the treatment and all minor and major operations may be carried out while the patient is under the influence of the drugs, with or without the addition of inhalation anesthesia.

In conclusion, we wish to add that the more intelligent, the more refined, and the more cultured the woman, the more readily does she come under the influence of the medication, the less does she require of the drugs, and the more satisfactory is the result, and the more appreciative is the patient.

#### SOME CLINICAL RELATIONS OF THE DUCTLESS GLANDS.\*

By S. W. LITTLE, M.D.  
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SO much has been written about the ductless glands that one is apt to shy at a new article; so much has been claimed that one grows skeptical. Nevertheless, it is certain that these organs are all important and some of them are vital. Our ignorance is colossal, but we do know some facts concerning them and in certain cases may apply our knowledge clinically. A few personal clinical experiences may serve to show that even our slight knowledge may sometimes

\* Read before the Medical Society of the County of Livingston, January 5, 1915.



be used with great satisfaction and also that the field of usefulness will be much wider as our knowledge increases.

At this time I shall confine myself to but two of these organs, the pituitary body and the suprarenal cortex. These two, with the islands of Langerhans and the parathyroid, are the ductless glands, each of which has proven essential to life. The others, not even the thyroid, appear to be absolutely vital, though undeniably of very great importance. It is suggestive that the four vital ones comprise glands derived from each of the three embryonal germ layers, the pituitary from ectoderm, suprarenal cortex from mesoderm, and both parathyroid and islands of Langerhans from endoderm. Therefore disorder of any one of these four must be a serious matter. Disorders of the others may be, and often are, serious, but obviously not to the same degree as these absolutely essential glands. It should be remembered that the suprarenal medulla, the chief source of adrenalin, is *not* essential to life, but the cortex is.

The pituitary cases reported will illustrate those cases in which the results are very gratifying: the cortex cases those in which the results are at least so encouraging as to stimulate one to further study and to hope for great things in the future.

Three of the pituitary cases are so much alike that a history of one will serve for all. One is a man, the other two are women, all in middle life. All presented nearly identical features. The first case will serve as a type.

CASE 1.—Male, age 55, married, weight 170. Previous history unimportant, except that he used to be a "sweet-tooth." Family history unimportant except that his father's people are, as a rule, tall and heavy, suggestive of a mild degree of giantism. This condition is known clinically and experimentally to be due to hyper-pituitarism.

Present difficulty. Says he is not sick, but that he can't attend to business because he goes to sleep all the time. Carries a bottle of ammonia to inhale when the drowsiness overcomes him. This condition has lasted about six years and is getting worse. He has been the rounds, and has consumed quarts of tonics. His disability is so severe that he is fearful of becoming absolutely unable to earn a living. Questioning soon brought out two other characteristic symptoms, polyuria and muscular weakness. These three symptoms together, drowsiness, polyuria and muscular lassitude, are one of the few syndromes I am glad to see, because I am confident a good prognosis can be fulfilled. This is a case of hypo-pituitarism, following a hyper-pituitarism which seems to be, on his father's side, a family characteristic, as indicated by so many large individuals.

One curious feature should be noted. Though so sleepy, yet he could not get very good rest at

night. This was because he was disturbed so frequently to empty the bladder. The urine was normal except for the characteristic low specific gravity of diabetes insipidus, a condition known to be a result of hypo-pituitarism.

This patient, beginning January 18, 1914, was given two grains extract of pituitary gland three times a day. In one week all symptoms were so much improved as to astonish me and to delight the patient. Instead of six or eight urinations at night, he had two or three, while his drowsiness and weakness were equally improved.

Since February 8th I have not seen him. In fact, it was difficult to induce him to report after the first week, because he claimed to be all right and saw no use in buying such expensive medicine any more. However, it is likely that his trouble will recur and that he will have to use the extract more or less.

The other two similar cases responded in exactly the same way.

CASE 2.—This case also will represent fairly well a class having one symptom in common, together with various combinations of typical symptoms pointing to failure of the pituitary. The common symptom is menorrhagia.

The patient is, of course, a female. Age 25. She consults a physician because of three symptoms, drowsiness, fatigue and menorrhagia. Questioning brings out three more symptoms, rapid loss of hair, polyuria (between two and four quarts daily), and constipation with distention of the bowels with gas. All this for about a year past and increasing. There is no anæmia. The heart, lungs and urine are normal except for the low specific gravity of the urine.

Personal and family history unimportant.

This case shows the failure of another well-known function of the pituitary gland, its tonic effect on involuntary muscle.

This case and others like it were quickly benefited by pituitary extract, the dosage being determined cautiously by trial in each case. From experience I know that pituitary extract is not a safe drug to use where it is not needed.

CASE 3.—Boy, age 16. Entered the hospital for surgical treatment unconnected with this history. I was asked to see him because the surgeon judged that he also had some ductless gland disorder, though without symptoms disturbing to the patient.

Examination showed a well-nourished lad of distinctly feminine build, smooth, soft skin, rounded, soft arms and legs, well-developed breasts, small feet, small hands with tapering fingers. He had no axillary hair and scarcely any pubic hair, which had, moreover, a feminine distribution. Penis and testicles of infantile type.

After two months on pituitary extract the pubic hair was remarkably increased, and the genitals were plainly developing. Also the hair was appearing in axillæ.

Finally, let me present three histories, the first

representing five similar cases, the second, two cases, while the third is unique, but all showing the probability of usefulness clinically of the little understood suprarenal cortex. The cortex is an organ totally distinct from the medulla, as shown by its structure, its embryological derivation, its being absolutely essential to life, and by its experimental study.

The cortex is derived from the mesoderm, and for reasons not discussed in this paper it seems highly probable to the writer that the functions of every ductless gland concern chiefly tissues derived from the same embryonal layer as the gland itself. If this be true, then the cortex has to do with mesodermic structures. Connective tissue and blood are mesodermic in origin. This will partly explain the theoretical basis of the therapy in the following cases, which are cases of sarcoma, a mesodermic growth, and the blood diseases, pernicious anæmia and Addison's disease.

CASE 4.—Woman, age 74. Amputation at the hip joint four years ago for osteosarcoma. Return of the growth in pelvis a year ago. As a bit of confirmatory evidence of the participation of the suprarenals in sarcoma, this case and all other cases of sarcoma seen since by the writer have exhibited larger or smaller areas of brown pigmentation on various parts of the body. This pigmentation appeared synchronously with the growth. Fresh areas appear from time to time and some disappear. These pigmented areas look like freckle marks.

Four months ago this patient was given an extract of suprarenal cortex prepared by the G. W. Carnrick Co. at the writer's request. It can by no means be said that this patient is getting well, but neither is she dying. In the following respects she is very decidedly improved: less pain, smaller size of mass, improved appetite. On two occasions, when the supply of cortex ran out she at once went down-hill, only to improve again when the medication was resumed.

In the other four cases of sarcoma an exactly similar experience may be recorded.

CASE 5.—Typical pernicious anæmia; male, age 40.

This man was given suprarenal cortex and the improvement was marked, as the blood determinations show. For a time Fowler's solution was also given, because it has formerly seemed the only correct thing to do. On cautious trial for ten days, however, without the arsenic, improvement was equally rapid.

The other case of pernicious anæmia is under the care of another physician, who told me that if suprarenal cortex could do anything for his patient it would certainly be a wonder. That was a month ago, and the man is improving.

It should be remembered that no conclusion can be drawn from these two cases, owing to the known fact that such cases commonly get well

apparently under any treatment, only to relapse later and perish. But the experience is hopeful at least, especially as my patient's improvement has been so much more rapid than usual.

MADE BY DR. M. L. CASEY.

|                          | Oct. 10,<br>1914 | Nov. 7,<br>1914 | Dec 12,<br>1914 |
|--------------------------|------------------|-----------------|-----------------|
| Red cells .....          | 1,060,000        | 2,456,000       | 3,864,000       |
| White cells .....        | 2,000            | 3,800           | 3,850           |
| Hæmoglobin .....         | 55%              | 80%             | 85%             |
| Color index .....        | 2.6              | 1.6             | 1.1             |
| Anisocytosis .....       | marked           | marked          | slight          |
| Poikilocytosis .....     | moderate         | slight          | slight          |
| Differential (500 cells) |                  |                 |                 |
| Polymorphonuclears ...   | 58.25%           | 63.20%          | 61.80%          |
| Small mononuclears....   | 36.25            | 26.00           | 29.00           |
| Large mononuclears....   | 3.50             | 6.40            | 6.20            |
| Transitionals.....       | ...              | ...             | .80             |
| Eosinophiles .....       | 1.75             | 3.80            | 2.00            |
| Mastzellen .....         | 0.25             | 0.60            | 0.00            |
| Megaloblasts .....       | 2                | 0               | 0               |
| Normoblasts.....         | 0                | 0               | 0               |

CASE 6.—Typical Addison's disease. Woman, age 34. This woman had persistently grown worse for a year under my care, with all the usual treatments. In October, 1914, she began taking suprarenal cortex and within two weeks felt better. She now says that she is about as well as she has ever been.

It seems from recent investigations that it is the *cortex* of the suprarenal which is at fault in Addison's disease and not the medulla at all, whence comes the well-known adrenalin. It is also interesting to recall that a condition of the blood closely resembling the blood of pernicious anæmia not uncommonly occurs in Addison's disease. Also to recall the pigmentation in the sarcoma cases referred to above. The sarcoma pigmentation is not the same bronze color as in Addison's disease but more like the color of freckles, a yellowish brown.

These few cases are enough to make my point, that already we may apply effectively our scanty knowledge, that we are rapidly acquiring new facts, and that we may hope from persistent study of these organs to add still further to our list of conquered diseases.

## THE PROBLEM OF THE SURGICAL CLINIC AS IT RELATES TO THE CLINIC WORKER.\*

By ALFRED J. BROWN, M.D.,  
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ONE of the most important problems in clinic administration is the difficulty of obtaining a sufficient number of properly trained surgeons to carry on the work of caring for a large number of surgical patients, the majority of whom need something done for them in the way of bandages, etc., thus, on the average requiring more time than the medical patient. The medical colleges of New York City each

\* Read before the Associated Out-Patients Clinics, at New York City, January 20, 1915.

year graduate a goodly number of students, many of whom, after the completion of their hospital service, remain in the city and should normally be attracted to the various dispensaries as workers. Still the number of men obtainable for this work is very small, and many, if not most, of the clinics of the city are undermanned, and this in spite of the fact that the out-patient department of a hospital is and rightly should be a stepping stone to the indoor service of the hospital, and for that reason should attract the young surgeon.

The statement has been made that many more of the men are going into the laboratories to carry on special work, and do not have time for the dispensaries.

This is in a measure true. It is also, however, true that all of the men who go into laboratory work immediately upon completion of their hospital course do not give up the practice of medicine or surgery, but enter the laboratory in order to enlarge their knowledge, and later, when the demands upon their time become more pressing, gradually pass from the laboratory to the clinical side of medicine.

With this in mind it may be well to contrast the conditions met with by the graduate entering the two fields of service.

If, upon completion of the hospital course, the graduate elects to enter one of the laboratories connected with a teaching institution or hospital, with or without the possibility of a teaching position and a small salary in view, he is taken in hand by an older member of the laboratory force and set along a minor line of work in order to become acclimated, as it were, to the conditions of the laboratory. He is allotted working space, materials with which to work, and is allowed plenty of time in which to do it, and all that is required of him is that it be done well. At the same time he is usually allotted a portion of the routine work of the laboratory, which he carries on in addition to his special work. Later he is put on some more important and difficult problem along lines in which he has become especially interested or to which he has proven particularly suited. In this way his interest does not flag, and gradually and naturally he becomes a member of an organized force of workers bent along definite lines and of more or less productivity, according to the conditions existent in the individual laboratory.

The case of the surgeon entering upon a dispensary service as usually organized is somewhat different. He enters into that department of a hospital which is designed to furnish, and under proper conditions should furnish, the majority of patients for the indoor service. At the same time there is presented to him for examination and care a class of case with which

he is totally unfamiliar, and in consequence he is for a time at least absolutely at sea and the changed conditions are just as difficult for him to become adapted to as in the case of the laboratory man. For example, the care of a case of acute appendicitis or a fracture of the femur is an old story to the surgeon just graduated from the hospital and one with which he has become accustomed to deal, but an infected finger or a fracture of the forearm presents a problem which is strange and which has, up to the present time, existed for him merely as a matter of abstract interest and now for the first time offers itself as a concrete fact. In the hospital service he has had four or five members of the interne staff constantly associated with him in his work with whom he can discuss his problems and several members of the visiting staff to whom he can always submit any difficult point. At the same time materials with which to work are at hand, the nursing staff is adequate, and though very busy, he has been able to take sufficient time to meet his problems and has been trained by his college teaching to meet them in a careful and scientific way. In the out-patient department he is overwhelmed with a mass of patients crowded into a small space, for each of whom something must be done and done at once. Added to this is the knowledge that the rooms must be cleared for the next clinic in a certain limited space of time, which is definitely fixed and must not be exceeded. If he takes his problem to his chief he finds that he also is working under the same conditions and that after a short examination of the main condition of which the patient complains he is given a brief outline of what to do and the hurry and rush goes on. The constant effort on the part of all the members of the staff is to get through on time and have the rooms cleared and ready for the clinic which is to follow. Histories are as condensed as possible and consequently unsatisfactory, thorough examinations cannot be performed in the allotted space of time, and notes on the progress of the patient at the time of subsequent visits are impossible. If, even under such conditions, he does carry on in some fashion a series of cases in which he is interested and at the end of a variable length of time desires to look up the case records in order to obtain data from which to draw conclusions, he finds upon inquiry at the history record room that histories from the out-patient department are not filed according to diagnosis, in some cases not even by name, but are done up in bundles which are labeled with the year in which they were received and consequently he is confronted with the task of examining thousands of histories in order to obtain the few that he desires. A correct form of diagnosis index is not at hand, a follow-up system by which he can keep track of patients is not in use

except in a few cases which the Social Service Department may be able to care for in addition to their regular work, and even a method of automatically recording each visit of the individual patient is not in use in some of the clinics. Is it, therefore, at all surprising that after an experience of these conditions the surgeon finds his enthusiasm diminishing, that he begins to arrive a little later each day and to leave a little earlier, and eventually either resigns or retains his title as dispensary assistant only in the hope of eventually being promoted to the indoor service. From his standpoint the dispensary is regarded as a necessary evil which must be endured in order to obtain an indoor hospital service, and the shorter his period of dispensary service the better pleased he is. In addition there is an element of grave danger in such a condition. During his four years in the medical school the student is taught to rely upon careful observation and warned constantly against jumping at conclusions. This is continued in his term of internship at the hospital and he is graduated with a profound respect for and a desire to accomplish careful competent work. In his dispensary service he finds these principles set aside, diagnoses are usually "snap diagnoses," and everything is done in a hurry and under rather difficult conditions. This occurs just at the outset of his active life as a practitioner, and as a result he runs the risk of losing his former methods and gradually lapsing into carelessness in examination and treatment. Thus a man who normally would become a careful and scientific practitioner becomes addicted to slipshod methods, six years previous training is wasted, and the blame can be laid nowhere but upon the dispensary.

A contrast between the indoor and outdoor services of the hospital may be of value as showing the great discrepancy between the two along two lines—first, the amount of service rendered to patients, and second, the physical conditions under which these services are rendered. Bellevue Hospital will be taken as an example as it is the Municipal Hospital.

In the year 1913 the indoor service of the hospital admitted 40,146 new cases, gave 454,770 days' hospital treatment, and had an average daily population of 1,244 at a per capita cost of \$1.8956 per day. To care for these patients are 101 physicians and surgeons on the visiting staff, 67 internes who devote their entire time to the care of patients, an average of 282 nurses and 715 employees, a total of 1,165 individuals.

During the same year the out-patient department admitted 40,340 new cases, 194 more than the indoor service (and when, in addition, it is taken into account that many cases are referred from the outdoor to the indoor service the difference is still greater), the total visits were

141,180, and the cost per visit \$0.1286. To care for these patients are 66 physicians and surgeons (none of whom because of limitation of dispensary hours in each class can spend more than two hours every other day in the dispensary), 4 nurses, 1 registrar, and 4 employees, a total of 75 individuals, as contrasted with 1,165 for the indoor department.

Second, as to physical conditions: Bellevue Hospital occupies the space of three city blocks, extending from Twenty-sixth to Twenty-ninth Streets and from First Avenue to the East River, approximately eleven acres, with 182,890 square feet of floor space devoted wholly to wards. In this area the ground floor alone of the old Bellevue Medical School building is assigned to the out-patient department. Of the area allotted to this purpose the Tuberculosis Clinic has 983 square feet, leaving for Surgery, Medicine, Genito-Urinary, Pediatrics and Gynecology 2,881 square feet, of which 1,530 square feet is used as a waiting room for patients, thus leaving 1,351 square feet which may be considered ward space of the out-patient department. When it is remembered that two clinics are held at the same time and the available space must be divided between them, and further, that at present an average of over 600 patients a day receive treatment in a space a little larger than the lot upon which the ordinary New York City private house stands, it will be easy to realize that the facilities afforded are wholly inadequate to the demand. Furthermore, Bellevue Hospital is not an isolated instance, but the conditions shown can be approximated in several dispensaries in the city, and in some can be exceeded.

The above condition of affairs obtaining and confronting the dispensary worker upon his entrance into such work, the obvious thing to do is to attempt to remedy the defects and endeavor to create conditions under which work can go on efficiently and in such a manner as to stimulate and hold the interest of the worker in his work. The field of the surgical out-patient department covers the diagnosis of surgical conditions requiring hospital treatment, the care of minor surgical conditions and of convalescent cases, and in addition an immense opportunity for usefulness in preventive lines, for the hastily treated out-patient may, and often does, become the in-patient, and the carelessly treated convalescent after operation, or the one who does not return for treatment, often reverts from his position as an out-patient to that as an in-patient.

The Surgical Section of the Associated Out-Patient Clinics has formulated a set of proposed standards for the conduct of surgical clinics and upon these it is unnecessary to dwell here. There

are, however, certain major lessons which can be learned from the above. It can be seen that the object should be more closely to approximate the conditions of the dispensary to those of the laboratory, for, after all, the out-patient department should be the laboratory of the early stage of the active surgeon's life, a post-graduate course in which, together with a certain amount of routine, he may enter into special scientific work and carry on the methods that he has been taught in the medical school and the hospital. The worker, therefore, has the right to expect that opportunity will be given him to carry on this work under the guidance and direction of an older man until such time as he has become acclimated and is able to choose his line of work for himself. In order to attain such conditions the space allotted to the out-patient department should be more in keeping with the importance of its work and less disproportionate to that of the indoor service of the hospital. Time limits for the workers should be abolished, and this can be accomplished only by allowing each department of the clinic to have its own set of rooms and each worker his own desk in which his personal records can be kept. It is even not too much to expect that each worker should have his own cubicle for examination of patients and perform such operations or dressings as may be required in the larger rooms set off for that purpose. Proper methods of keeping records, follow-up systems through the social service, sufficient nursing force, competent clerical assistance and access to special laboratories, such as X-ray, mechanotherapy, etc., are, of course, essential, and these have been strongly recommended by the surgical section.

In order to attract workers to a dispensary the work must be made attractive in a manner which must have as its basis some advantage which the worker will obtain through his connection with the dispensary. The question of salary has been suggested, but this, though an excellent measure and one which will attract workers of a certain type, will not better the condition of the dispensary or add to the experience or knowledge of the workers, for without physical changes the work will be carried on along the same old lines. With the changes suggested above, the advantage offered to the prospective worker would be along lines with which he is familiar. He would have, in addition to the routine, special work to do and a place in which to do it. He would thus feel that he was accomplishing something definite and not merely a cog in a machine to grind through a certain number of cases in a definite limited space of time. The general attitude of the worker toward the dispensary would change gradually, and the idea of the work being a bore and a necessary evil to be endured be lost.

## HALF A CENTURY OF MEDICINE AND SURGERY.\*

By GEORGE E. BLACKHAM, M.D.,  
DUNKIRK, N. Y.

WHEN I began the study of medicine, about the year 1862, the world of medicine, in this country at least, was very different from that of today. Medical education was as simple then as it is complex now. The prospective medical student first arranged to "read medicine" for three years with a preceptor, a practising physician. The expression "reading medicine" was a rather elastic one in those days, in the rural districts at least, and was readily stretched to taking care of the doctor's horse, sweeping out his office and making one's self generally useful about the premises. It did, of course, include some reading of the old books in the doctor's library, Watson's Practice, Flint's Practice, Gross's Surgery, Erichsen's Surgery, Hamilton on Fractures, Gray's Anatomy, or possibly Wistar's, if the doctor was not up to date enough to have Gray, Dalton's Physiology, or possibly Carpenter's, Biddle's Materia Medica and other books. I am not going to wear out your patience with the whole list read, or supposed to be read, by the student in the intervals of his labors as hostler, etc.

It also included an introduction to the skeleton in his closet, from whose unattractive outlines some knowledge of osteology was to be obtained.

After a while he was intrusted with the proud duty of pounding up drugs in the big iron mortar, making decoctions and tinctures, rolling pills and other useful stunts that would now be billed in a medical college prospectus as, "Practical Work in the Pharmacological Laboratory." Still later, instead of sitting outside in the buggy to hold the horse while his preceptor visited the sick, he was permitted to accompany him into the sick room, partly because that was in the bond, and partly because it was recognized that, as a rule, in those days a doctor's horse did not need any holding—he was glad enough to stand quiet whenever he had a chance. In the sick room the student had abundant opportunities to learn how his preceptor dealt with people. I do not mean only diagnosis and treatment of the sick but also, often more important, of the healthy. How he managed the wife and the mother-in-law, partly by agreement with them that yarn from a red sock that had been worn on the left foot was an effective prophylactic against mumps if tied around the neck in the dark of the moon, etc. I have an old man's fancy that the student learned much about human nature in these trips that is apt to be missed by his more learned successor of today whose medical edu-

\* Read at the Annual Meeting of the Eighth District Branch of the Medical Society of the State of New York, at Niagara Falls, September 23, 1914.

cation is confined to the lecture room, the laboratory and the hospital ward. For, be it known unto you, practicing medicine and surgery in a hospital and in a private family are not necessarily identical nor does the one fully prepare for the other. After a couple of years of reading, hostling, practical pharmacy and bedside observation it was time to go to a medical college. So on some fine fall day the student packed his other shirt, box of paper collars and some books into the old red carpetbag and started for college. When he got there, there was no bother about a preliminary examination further than to ascertain that he had the necessary funds to pay the fees and that his preceptor was a regular practitioner in good standing. After paying his fees and getting his ticket he took his assigned seat in the lecture room and began to listen to lectures on every branch of medicine and surgery, many of which might as well have been in Sanscrit for all he was able to understand. He also at this time bought a dissection ticket and drew lots for his share of a cadaver and began this rather unattractive part of his work. I say unattractive advisedly for the legal supply of cadavers was very limited and had to be supplemented by informal contributions from cemeteries and some of the subjects were certainly over ripe when picked. Besides he was required to dissect only one section of a cadaver during his entire college life and the instruction in practical anatomy was often perfunctory and uninteresting. Four months of lectures and then back to his preceptor to act now as a sort of clinical assistant, while, maybe, some new student relieved him of some of the grosser duties of hostler and office boy. Another fall, and he was back at college listening to the same old lectures as the fall before, attending some clinics at the hospital, possibly, if he had a pull, getting some out-patient work in the way of obstetrics or minor surgery, and then about the beginning of February, going in for his final examinations, which were not, from the modern point of view at least, unnecessarily severe. Usually he passed, the college needed his graduation fee too badly to be unkindly strict, and, about Washington's birthday, he was publicly presented with his diploma which proclaimed in rather halting Latin, his mental, moral and scientific fitness to practice the ancient and honorable science and art of medicine and surgery. This was duly signed by the chancellor and faculty with *us* tacked on to the ends of their given names to give the document a classic flavor, and it was sealed with the great seal of the college, to make it more binding. Armed with this imposing document, which authorized him to practice upon a confiding clientele, if he could find such, he started out on his professional career.

And how was he fitted for this work? Rather poorly according to modern standards. He had learned some anatomy, some physiology, some materia medica and a trace of chemistry, he had some clinical experience, a little in the hospital and a little more with his preceptor. He had heard much about pyogenic membrane but nothing about pyogenic bacteria, he had probably looked at a microscope and POSSIBLY *through* one once or twice, but had never even heard of a laboratory course. He knew pus when he saw it, and he saw lots of it, and had been taught that some pus was "laudable." On looking the word up in the dictionary I find that it means "praiseworthy." But, for the life of me, I cannot now remember what it was that my learned teachers found "praiseworthy" in pus of any kind. He had been taught to expect suppuration and surgical fever after operations, and this was one of the few of his youthful expectations that was destined to fulfillment. He had never heard of a blood count but had been taught to observe the manner of its clotting in the vessel after a venesection, if it were buffed or cupped, etc., and to draw certain auguries therefrom. He had never seen a sphygmographic tracing of the pulse but he had been taught, by his preceptor, to take the pulse with the "tactus eruditus" and, I think, to learn many things therefrom that are apt to be missed by his more learned and mechanical brother of today who is apt to rely more on instruments of precision than upon his own observation. There is no gain without some loss. Well, he had learned all this and, like other medical students from time immemorial, many other things not set forth in the college curriculum, and he went home and borrowed money enough to fit up an office some where. If it was in the country, and most likely it was, it was probably furnished pretty much like that of Rip Van Winkle, Jr., M.D., as related by the wise and witty Autocrat of the Breakfast Table, Dr. Oliver Wendell Holmes.

Lancets and bougies, great and little squirt,  
Rhubarb and senna, snakeroot, thoroughwort,  
Ant. tart., vin. cochl., pil. cochizæ, and black drop,  
Tincture of opium, gentian, henbane, hop,  
Pulv. ipeccacuanhæ, which for lack,  
Of breath to utter, men call ipecac,  
Camphor and kino, turpentine, tolu,  
Cubebs, "copeevey," vitriol, white and blue,  
Fennel and flaxseed, slippery elm and squill,  
And roots of sassafras and "sasfrill,"  
Brandy, for colics, pink root, death on worms,  
Valerian, calmer of hysteric squirms.  
Musk, assafetida, that resinous gum,  
Named from its odor, well it does smell some.  
Jalap, that works not wisely but too well,  
Ten pounds of bark and six of calomel.  
For outward griefs there was an ample store,  
Some twenty jars or gallipots or more.  
Ceratum simplex, housewives oft compile  
The same at home and call it "wax and ile."  
Unguentum resinosum, change its name,  
The "drawin' salve" of many an ancient dame.  
Argenti nitras, also Spanish flies,  
Whose virtues make the water bladders rise.

\* \* \* \* \*

Leeches, sweet vermin, don't they charm the sick?  
And sticking plaster, how it hates to stick.  
Emplastrum ferri, ditto pices, pitch.  
Washes and powders, brimstone for the \* \* \* which?

There were other things too. Knives, saws, tourniquets, lint and bandages, but no sterile gauze or absorbent cotton, no microscope and the chances are, no clinical thermometer. True, that useful instrument was not unknown. It had been used in actual practice a hundred years before by De Haen, George Cleghorn and James Currie, and August Wunderlich was at that very time publishing the results of his extensive observations on the temperature of fevers, but the thermometer was not in general use, in fact was looked upon as a rather finicky fad by the average practitioner.

Much the same may be said of the hypodermic syringe which had been introduced by Alexander Wood, of Edinburgh, in 1843. It was regarded as a rather dangerous toy. You will readily see that there was some excuse for this view. The technique had not been perfected, the needles were coarse, asepsis was not known, some ugly local abscesses had followed hypodermic injections, and deaths from unintentional intravenous injections were by no means unknown.

The mosquito, the bedbug and the tick were regarded much as present national administration seems to have regarded Mexico, as undesirable but not dangerous neighbors. Yellow fever was spread by "fomites," whatever they were, and malaria by the grace of God, and no one ever thought of blaming it to an anopheles or a stegomyia. Even the human appendix vermiformis, that Golconda of the modern surgeon, lay curled up in the bend of the caecum, for all the medical profession of that day knew, an 'insignificant, harmless, blind pocket without a fault or a function.

Of course, the new fledged M.D. had his troubles after he got his office open. Some of them were much like those which torment his successors of the present day, namely that it was hard to get business and harder, very much harder, to get pay. Patients were widely scattered through a sparsely settled country and the long rides over roads of the most primitive construction were as wearisome to the body as they were trying to the soul.

Local anesthesia was unknown, antisepsis and asepsis had not been heard of, suppuration after accidental or operative wounds was common and not infrequently fatal. No trained nurses existed to take intelligent charge of his cases and keep accurate bedside notes during the long intervals that often necessarily intervened between his visits. Consultations and clinical assistance were infrequent because of the difficulty of communication and the country doctor of those days had to take the responsibility and do the best

he could without expert advice or competent assistance. It was hard, but it made him self-reliant and resourceful, though at the same time often narrow and bigoted.

The new disease, malignant angina, or putrid sore throat, as it was often called then, diphtheria as we call it now (it was not really new even then, there had been frightful epidemic of it), was having a mortality of above 75 per cent in some sections, paying little or no attention to treatment and spreading like fire in a stubble field. It was not quarantined and the funerals of its victims were usually public.

The Hahnemanian heresy was making great headway, first among the well to do, whose dainty palates rebelled against the too robust flavor of the old time emeto-cathartic of scammony and jalap, and who felt, with some reason perhaps, that blue blood was altogether too scarce in this country to be wasted by the lancet of the phlebotomist. Alas and alack! These schismatic patients were of the paying class and they persisted in getting 'well after the exhibition of potent drugs like carbo. veg. and calcarea carb. in the 2000th centesimal trituration, in about the same proportion as did those who were loyal to the regular school and were bled, blistered and purged, *secundem artem*.

Not only were patients losing faith and running after strange gods but the foundations of his own faith were being shaken. Virchow in his cellular pathology had overthrown the old humoral pathology, Rokitansky, of Vienna, with his elaborate investigations of post-mortem appearances both macro and microscopic was laying the foundations for the school of therapeutic nihilists, of whom Osler is the most illustrious prophet, and whose ideal of the practice of medicine seemed to be to make an elaborate diagnosis in the sick-room on Monday and verify it at the post-mortem on Friday afternoon. This was called "expectant treatment." It was a sort of "watchful waiting" in which it was against the rules of the game to interfere actively till too late to have any effect. You may be surprised to learn that patients got even well under this plan, I have sometimes thought, to the disgust of the ultra-scientific physicians who practiced it. For, of course, you cannot hold a confirmatory post-mortem on a patient who has neglected to die.

Patients were also getting well on the 2000th triturations of a good many different things (only one at a time though). So here was a mess. The doctors who did not believe in giving any medicine at all and those who believed in giving highly potentised triturations of powerful drugs like carbo. veg. and natrium mur., etc., were having about equally gratifying results and some unscientific people began to think that the two methods had something in common. Whether this be true

or not as to the drug part of the treatment, it is true that those patients of all sorts of doctors did best who had the best food, best ventilation and best sanitary surroundings generally. An empirical asepsis was being practiced before its scientific basis was understood.

It was a dark hour for the regular practitioner. But the dawn of a new era in medicine was already beginning to tint the east with the rose.

As early as 1865 Louis Pasteur had investigated the silkworm disease that threatened to destroy the great industry of Southern France. He found it due to a parasite and he also found the cure and how to prevent the disease from spreading.

Then followed his investigations of anthrax, chicken cholera and rabies and the great principle of the bacterial causation of communicable diseases was established, as was the possibility of immunization. Then Lister took up the work and applied it to surgery, at first with a complicated and burdensome technique, involving carbolic sprays playing over the scene of operation, wet dressings with as many layers as *pousse cafe*. Gradually the technique was simplified, the carbolic sprays and the complicated wet dressings were abandoned and replaced by simpler dry dressings and antiseptic dusting powders, prominent among these latter was one whose peculiar fragrance proclaimed as certainly, and far more loudly, than the label on the package "Made in Germany."

To paraphrase Tom Moore:

"You may break, you may shatter the vase if you will  
But the smell of iodoform sticks to it still."

The idea seemed to be to smoke out the bacteria with an iodoform smudge. But either many of the pathologic bacteria were devoid of the olfactory sense or they had gotten their training abroad, for they proved to be immune to perfumes like iodoform, limburger and the like, in fact they thrived on them while some patients died of iodine poisoning. So the fragrant powder was reluctantly abandoned and we have pretty nearly fallen back upon the good old prescription that the Prophet gave unto Naaman, the Syrian, "Wash and be clean." Asepsis is now our ideal, with antiseptics only when they are unavoidably necessary to secure asepsis. Asepsis and the aseptic absorbable ligature have well nigh banished suppuration from our operating rooms and surgical wards and reduced the mortality after operations from an appalling figure to an almost negligible percentage.

Later came the work of Robert Koch in identifying the specific bacterial cause of Asiatic cholera, and of tuberculosis, the discovery of the toxin of diphtheria by Roux and Yersin in 1888, of antitoxic sera by Behring

and Kitosato in 1890, of the antitoxin of diphtheria by Behring in 1894.

With the new bacterial pathology firmly established on purely scientific and experimental grounds the serum therapy has been deduced from it with almost mathematical certainty and precision, and the results are marvelously successful as shown by the decreased mortality of many diseases of bacterial origin.

To antiseptic, or preferably aseptic, surgery the peritoneal cavity is no longer forbidden ground. The aseptic surgeon of today chases the misbehaved appendix to its lair and removes it with no more concern on his part and even less danger to his patient than we, in the pre-antiseptic days, used to amputate a finger.

What then is the difference between the medicine and surgery of today and of half a century ago.

Mainly it is this, I think. Half a century ago we dogmatized and cooked up *a priori* theories of disease and cure, we guessed at our diagnosis and therapy. Today you of the present generation have neither time nor taste for *a priori* dogmatism, your diagnoses are not guesses but scientific deductions from carefully observed facts. Is an obscure case of luetic origin? A Wassermann or a Noguchi reaction will often tell. Is the next case one of typhoid? A Widal reaction will help you to decide. Have you a doubtful case of diphtheria? You can make a culture, or the state will make it for you, and when it is done your question is answered with all but the mathematical certainty.

How would you like to try to treat a case of fever in which the temperature fluctuations were not accurately recorded to a small fraction of a degree several times daily, to diagnose a doubtful case of diphtheria without a culture or treat it when diagnosed as diphtheria without antitoxin? Would you be willing to practice medicine without a clinical thermometer or a hypodermic syringe, or surgery without asepsis? And yet the country doctor of fifty years ago had to do all these things and many others of a similar nature and the wonder is that he did as well as he did with the very limited and imperfect means at his command.

You have a hundred means of exact diagnosis that he had not, a hundred means of proper treatment that he had not. Medicine and surgery have advanced more in the last fifty years than in centuries before, but the end is not yet. Medicine and surgery are rapidly advancing in the direction of exactness and certainty and while they may never take their places along with mathematics and astronomy as exact sciences, it is up to you young men to bring about as close an approximation of that happy condition of affairs as possible.



## Notes from the State Department of Health

### RESULTS OF THE CHILD WELFARE CAMPAIGN, 1914.

The New York State Department of Health recognized the importance of reducing the death rate among infants by the establishment of a Division of Child Hygiene in January, 1914. The United States Government established such a division three years ago, New York City in 1908, and Buffalo in 1913.

In New York City the infant death rate has been reduced from 162 to 96 per thousand living births in the last ten years, while that outside of New York City has fallen but little during the same period.

A census taken a year ago of the infant welfare work already established in the state showed that it had been carried on in only twelve localities. It was, therefore, decided that the first activity of the reorganized State Department of Health should be a campaign to reduce infant mortality throughout the state. It was felt that this could best be accomplished by means of popular exhibits, talks and demonstrations. The objects of the campaign, as planned, were to educate the mother in the care and feeding of her child, to arouse the community to the necessity for child welfare work, to point out the fact that a high infant mortality was unnecessary, to secure the establishment of infant welfare stations and to improve the general milk supply.

Forty-five cities were visited and 150 popular health lectures were given between April 1st and July 1st. During the summer months the exhibits were sent to country fairs. Fifty-seven fairs were visited, at which it is estimated that 1,350,000 people were in attendance.

Since the first of November the exhibits have been sent for periods of one week to various smaller villages of the state, and requests have been made which keep this exhibit busy continually.

The expenses of the campaign, including the salaries of all connected with it and the transportation charges, were \$14,500. Leaflets and pamphlets dealing with child welfare and care of the baby have been prepared, and 75,000 copies were distributed personally by the nurse in charge of the exhibit. These leaflets were also published in Polish and Italian. Special attention was paid to instructing the mothers in regard to their clothing and diet before the babies were born in order to reduce the infant mortality in the first month of life.

The results of the campaign can be ascertained by a study of the infant mortality statistics for the last six months of 1913 and 1914, as the educational campaign would not take any effect before July 1st and its teachings particularly emphasized the care of the baby during the hot summer months. In 1913 the rate from July 1st to December 31st was 137, while in the last six months of 1914 this had been reduced to 112 per one thousand living births.

The mortality for the state was reduced from 126 to 111, corresponding to a saving of over 1,400 infants' lives.

In 32 of the 45 cities visited by the exhibit, the infant mortality rate fell below that of 1913, while of the 12 cities not reached by the exhibit in only four did the rate fall below that of 1913.

In view of the fact that there has been a slight increase in the total number of deaths in the state this year, it is fair to assume that the marked decrease in the total number of infants' deaths has been due to the activities of the Division of Child Hygiene, the education of the mothers through the exhibits, lectures, pamphlets, articles in the press and the establishment of infant welfare stations, which all contributed largely to this result.

The program, in brief, for the work of 1915 for this division is:

1. A continuation of the Infant Welfare Campaign

of Education in the 29 cities where no infant welfare work has been established.

2. Placing of exhibit, with baby health conferences, in the smaller villages and rural communities.

3. Preparation of exhibits for the 44 county fairs which were not reached last summer.

4. Regular inspections of the infant welfare stations in operation.

5. A study of the methods of reducing the very high infant mortality in the infant institutions in the state.

6. An investigation of the care and education afforded feeble-minded children.

7. Assistance of the Labor Department with the child labor certificates and a scientific study of the child labor problem.

H. L. K. SHAW, M.D.,  
*Director, Division of Child Hygiene.*

## Medical Society of the State of New York

### TOMPKINS COUNTY MEDICAL SOCIETY.

REGULAR MEETING, AT ITHACA, MARCH 16, 1915.

The meeting was called to order by the President, H. B. Besemer. There were 35 members in attendance. The scientific session was devoted entirely to the subject of artificial respiration.

Dr. Sutherland Simpson, of Cornell, gave an "Historical Review and Methods of Artificial Respiration." Dr. Simpson treated with the aid of charts and clinical demonstration, the development of the manual methods which were and have been in use since 1857. The subject was very ably presented and was listened to with marked attention.

Dr. C. W. Webb gave a "Description of the Different Forms of Apparatus, and Demonstration of the Melzer Apparatus." Dr. Webb took up the different form of mechanical artificial respiration describing each assisted by cuts of the different ones and exhibited and demonstrated the Melzer apparatus.

The general discussion seemed to emphasize the expression of opinion that the public has an exaggerated opinion of the value of mechanical artificial respiration, seeming to think that all that is needed to resuscitate an asphyxiated person is that a "Pulmoter" be secured and used, using the word pulmoter to cover all forms of mechanical artificial respiration apparatus, while the actual fact seems to be that at the present time in the present stage of development of such apparatus it is not equal in results, nor nearly so, to the manual methods for many reasons. No layman, except after special training, could successfully use any of the present apparatus and very few physicians indeed, never having seen or operated such apparatus, could have much better success than the layman. Therefore the use of the present-day apparatus seems to be limited to its psychological effect on the public at large and as a measure of last resort by the physician in charge, except when it is used in institutional work by one who has had training in its proper application and operation.

### MEDICAL SOCIETY OF THE COUNTY OF CHEMUNG.

REGULAR MEETING, AT ELMIRA, MARCH 16, 1915.

SCIENTIFIC PROGRAM.

Hon. R. P. Bush, M.D., Chairman of the Legislative Committee, placed before the Society the recommendation that the Secretary write the Governor of New York State requesting that he veto any bill changing the present law on vaccination. The recommendation was adopted by the Society and sent to the Governor.

"Oral Sepsis," illustrated with X-ray pictures and bridge work, John B. West, D.D.S.

Discussion, Arthur W. Booth, M.D., Elmira.

"Narcotic Drug Addictions and Treatment," William A. Palmer, M.D., Elmira.

MEDICAL SOCIETY OF THE COUNTY OF  
DUTCHESS.REGULAR MEETING, AT POUGHKEEPSIE, JANUARY 13, 1915.  
BUSINESS SESSION.Reports of the Committees on Memorials to the late  
Drs. Van Etten, Mellin and Powell.

Annual reports of officers and committees.

## SCIENTIFIC PROGRAM.

"Cholecystitis," Lucius W. Hotchkiss, M.D., New  
York."Operations at the Home, When and Under what  
Circumstances are They Justifiable?" James E. Sadlier,  
M.D., Poughkeepsie."Etiology, Pathology and Symptoms of Mastoiditis,"  
Henry F. Owsley, M.D., Poughkeepsie."Differential Diagnosis, Complications and Treat-  
ment," James E. McCambridge, M.D., Poughkeepsie."Health Officers Relation to the Physician," Paul V.  
Winslow, M.D., Wappingers Falls.MEDICAL SOCIETY OF THE COUNTY OF  
ULSTER.

REGULAR MEETING, AT KINGSTON, FEBRUARY, 2, 1915.

The meeting was held at the Bacteriological Labora-  
tory. There were a large number of physicians in  
attendance.Dr. Raymond Sanderson, County Bacteriologist, gave  
a most interesting talk. Dr. Sanderson explained the  
many ways of making use of the laboratory, and con-  
cluded by telling of the various methods of sending  
specimens to the laboratory.Dr. Rufus Crawford, of Saugerties, read a paper  
on diabetes, which was followed by a general discus-  
sion by all present.

## CAYUGA COUNTY MEDICAL SOCIETY.

REGULAR QUARTERLY MEETING, AT AUBURN, FEBRUARY  
11, 1915.

## SCIENTIFIC PROGRAM.

## Symposium on Carcinoma.

1. "Pathology," Howard I. Davenport, M.D., Auburn.
2. "Eye," George W. Whitney, M.D., Auburn.
3. "Nose and Throat," George H. Beers, M.D.,  
Auburn.
4. "Pelvis and Abdomen," William H. Coe, M.D.,  
Auburn.
5. "Breast and Thorax," Ledra Heazlit, M.D., Auburn.
6. "Bones," Joseph P. Creveling, M.D., Auburn.
7. "Medicinal Treatment," Eugene N. Boudreau,  
M.D., Auburn.
8. "X-Ray Diagnosis and Treatment," Arthur H.  
Brown, M.D., Auburn.
9. "Radium," L. Belle Richens, M.D., Auburn.

**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.CANCER: ITS CAUSE AND TREATMENT. By L. DUNCAN  
BULKLEY, A.M., M.D., Senior Physician New York  
Skin and Cancer Hosp. Paul B. Hoeber, 67 East  
59th St., New York. Price, \$1.50 net.DIABETES MELLITIS. By NELLIS B. FOSTER, M.D., Asst.  
Professor Medicine Cornell University. Asso. Physi-  
cian New York Hospital. J. B. Lippincott, Philadel-  
phia and London.THE TUBERCULOSIS NURSE, Her Functions and Qualifi-  
cations. For Practical Workers in the Tuberculosis  
Campaign. By ELLEN N. LA MORTE, R.N., GraduateJohns Hopkins Hosp., Former Nurse-in-Chief  
Tuberculosis Division, Health Department, Baltimore.  
Introduction by LOUIS HAMMAN, M.D., Physician-in-  
Charge Phipps' Tuberculosis Dispensary. G. P. Put-  
nam's Sons, New York and London. Price, \$1.50 net.LECTURES ON THE HEART. Comprising the Herter Lec-  
tures (Baltimore); A Harvey Lecture (New York),  
Address to Faculty of Medicine, McGill University  
(Montreal). By THOMAS LEWIS, M.D., F.R.C.P.,  
D.Sc., Physician City of London Hospital, Asst.  
Physician and Lecturer Cardiac Pathology, Univer-  
sity College Hospital, London. Paul B. Hoeber, New  
York City, 1915. Price, \$2.00 net.INTERNATIONAL CLINICS. A quarterly of illustrated  
clinical lectures and especially prepared original ar-  
ticles on Medicine, Surgery, Neurology, Pediatrics,  
Obstetrics, Gynecology, Orthopedics, etc. Edited by  
HENRY W. CATTELL, A.M., M.D., Phila., with the col-  
laboration of JOHN A. WITHERSPOON, M.D., A. Mc-  
PHERAN, M.D., FRANK BILLINGS, M.D., CHAS. H.  
MAYO, M.D., SIR WM. OLSEY, M.D., etc. Volume I.  
Twenty-fifth series, 1915. Philadelphia and London:  
J. B. Lippincott Company. Price, \$2.00.THE ORIGIN AND NATURE OF THE EMOTIONS AND MIS-  
CELLANEOUS PAPERS. By GEORGE W. CRILE, M.D.,  
Professor of Surgery, School of Medicine, Western  
Reserve University, Cleveland. Octavo volume of  
240 pages, with 76 illustrations. Philadelphia and  
London: W. B. Saunders Company, 1915. Cloth,  
\$3.00 net.LOCAL AND REGIONAL ANESTHESIA, including Analgesia.  
By CARROLL W. ALLEN, M.D., of Tulane University,  
New Orleans, with an introduction by RUDOLPH  
MATAS, M.D., of Tulane University, New Orleans.  
Octavo of 625 pages, with 255 illustrations. Phila-  
delphia and London: W. B. Saunders Company, 1914.  
Cloth, \$6.00 net; half morocco, \$7.50 net.MEDICAL ELECTRICITY AND RONTGEN RAYS AND RADIUM.  
By SINCLAIR TOUSEY, A.M., M.D., Consulting Sur-  
geon St. Bartholomew's Clinic, New York. Second  
edition, thoroughly revised and enlarged. Octavo of  
1,219 pages, with 798 practical illustrations, 16 in  
colors. Philadelphia and London: W. B. Saunders  
Company, 1915. Cloth, \$7.50 net; half morocco, \$9.00  
net.ABDOMINAL OPERATIONS. By SIR BERKELEY MOYNIHAN,  
M.S. (London), F.R.C.S., Leeds, England. Third  
edition, entirely reset and enlarged. Two octavo  
volumes totaling 980 pages, with 371 illustrations, 5  
in colors. Philadelphia and London: W. B. Saun-  
ders Company, 1914. Cloth, \$10.00 net; half morocco,  
\$13.00 net.DIAGNOSTIC AND THERAPEUTIC TECHNIC. A manual of  
Practical Procedures Employed in Diagnosis and  
Treatment. By ALBERT S. MORROW, M.D., Clinical  
Professor of Surgery, New York Polyclinic. Second  
edition, thoroughly revised. Octavo of 834 pages,  
with 860 illustrations. Philadelphia and London.  
1915. Cloth, \$5.00 net; half morocco, \$6.50 net.DIFFERENTIAL DIAGNOSIS. Presented through an  
analysis of 317 cases. By RICHARD C. CABOT, M.D.,  
Assistant Professor of Clinical Medicine, Harvard  
Medical School. Octavo of 709 pages, 254 illus-  
trations. Philadelphia and London: W. B. Saun-  
ders Company, 1914. Cloth, \$5.50; half morocco, \$7.00.A PRACTICAL TEXT-BOOK OF INFECTION, IMMUNITY AND  
SPECIFIC THERAPY, with special reference to im-  
munologic technic. By JOHN A. KOLMER, M.D.,  
Dr.P.H., Instructor of Experimental Pathology,  
University of Pennsylvania, with an introduction by  
ALLEN J. SMITH, M.D., Professor of Pathology, Uni-  
versity of Pennsylvania. Octavo of 899 pages, with  
143 original illustrations, 43 in colors. Philadelphia  
and London: W. B. Saunders Company, 1915. Cloth,  
\$6.00 net; half morocco, \$7.50 net.

NEW AND NON-OFFICIAL REMEDIES, 1915, Council on Pharmacy and Chemistry, American Medical Association. Contains descriptions of all the worth-while proprietary and non-official remedies now on the market in the United States, and comprehensive and trustworthy discussions of the composition, source, properties and dosages of proprietary remedies. Also critical discussions of the various classes of preparations. 426 pages. Paper bound copies will be sent by the American Medical Association, 535 North Dearborn St., Chicago, Ill., postpaid, for 50 cents, and cloth bound copies for \$1.00.

THE COMMONER DISEASES, Their Causes and Effects. By LEONHARD JORES, M.D., O.O., Professor der Allgemeinen Pathologie und Pathologischen Anatomie und der Universität Menburg. Author's English translation by William H. Woglam, M.D., Assistant Professor in Columbia University assigned to Cancer Research; Assistant Pathologist to St. Luke's Hospital, New York City. With 250 figures in the text. Price \$4.00. Philadelphia and London. J. B. Lippincott Co.

NURSING AND CARE OF THE NERVOUS AND INSANE. By CHARLES K. MILLS, M.D., Professor of Neurology in the University of Pennsylvania; Neurologist to the Philadelphia General Hospital. Third edition. Revised by the author, assisted by N. S. Yawger, M.D., Instructor in Neurology in the University of Pennsylvania; Assistant Neurologist to the Philadelphia General Hospital. Philadelphia and London. J. B. Lippincott Co.

## Book Reviews

SELECTED PAPERS, SURGICAL AND SCIENTIFIC, from the writings of ROSWELL PARK, late Professor of Surgery in the University of Buffalo, and Surgeon-in-Chief to the Buffalo General Hospital. With a memoir, by CHARLES G. STOCKTON, M.D. The Courier Co., Buffalo, N. Y., 1914. Price, \$3.00 net.

The good men do lives after them. So it is, in the "Selected Papers" of Roswell Park that we have an enduring testimony of the life work of this truly great man and famous surgeon. The long list of writings give evidence of his vitality, his enthusiasm and versatility.

The personality and biography of this remarkable character is recorded in a memoir at the beginning of the book by Dr. Chas. G. Stockton. He relates the significant incidents which occurred in the course of a brilliant career. This included a great variety of activities. He was especially interested in educational matters, for he was a profound scholar, a born teacher. It is said of him that the most valuable service that he rendered to Buffalo and the greatest asset he has left to this community was to be found in his example of ethical conduct which shall continue to be known and felt and which shall be the rule and guide as long as Roswell Park is remembered.

He elected to carry many burdens. One great aim was to know the cause of cancer. He organized laboratories for this purpose. He was a moving spirit in all matters pertaining to the common weal. He was thus chairman of the committee on arrangement of the International Congress on School Hygiene which convened in Buffalo in 1913. For years he strove to make the University of Buffalo a complete university. He was largely instrumental in adding a dental college to this institution.

He filled with honor and dignity the highest positions. He was President of the Medical Society of the State of New York, and of the American Surgical Association.

The latter honor he treasured most. His international reputation accorded him membership in the German Congress of Surgeons, the French and Italian Surgical Societies, the International Society of Surgery and other foreign organizations. He was seldom absent from these meetings and contributed largely.

The present volume under consideration contains 37 of his most important surgical and scientific articles. It testifies to the breadth of knowledge, surgical attainments and tremendous scope of this gigantic mind. A prolific writer, he contributed 167 monographs from 1878 to 1914.

In his writings the predominating characters are simplicity and orderly clearness, selection of essentials, driving toward his goal with adherence to the topic.

To lead such a life and earn such tribute—this is indeed worth while.

The city of Buffalo has met with an irreparable loss in Roswell Park—the community will never look upon his like again.

ROYALE HAMILTON FOWLER.

MODERN SURGERY, GENERAL AND OPERATIVE. By J. CHALMERS D'ACOSTA, M.D., SAMUEL D. GROSS, Professor of Surgery, Jefferson Medical College, Philadelphia, Pa. Seventh edition. Revised, enlarged, and reset. Octavo of 1,515 pages, with 1,085 illustrations. W. B. Saunders & Co., Philadelphia and London, 1913.

Since the first edition of this work in 1894, it has been deservedly popular as evidenced by its repeated appearance. The book in its present form is dedicated to Dr. William Stewart Halsted. The work of others has been freely quoted and wisely, frequently in the authors own words. In a work of this kind it is necessary to use the work of others. "A Contemporary Criticism," by Mr. W. W. Story, a poem of rare merit which precedes the preface well emphasizes this. It is a great gift and a high art to so arrange, and present a volume of this character that it will live for twenty years.

Dr. J. Torrance Rugh, associate in orthopedic surgery has contributed to the sections on Orthopedic Surgery, and to the Surgery of the Bones, the Joints, the Muscles and Tendons.

Dr. Willis F. Manges has revised the section on Roentgenology.

Dr. Thomas C. Steelwagon, Jr., aided in the revision of the section on Diseases of the Genito-Urinary Tract.

Dr. Chevalier Jackson, of Pittsburg, has described his very valuable methods in sections upon Tracheobronchoscopy and Esophagoscopy.

Analysis of the contents shows no radical departure from previous editions as regards general arrangements, chapter headings, etc.

Upon reading this book one is impressed. It is conservative, practical and up to the minute. The general principles as laid down represent the best teachings and the methods selected reflect the excellent judgment of the author.

The illustrations are abundant and are for the most part from photographs. Many are original. Some are taken from the writings of Gross, Keen, Mayo, Moynihan, Young, Kocher, Gibson, Halsted, Fowler, etc., to further enhance the methods described by these various men. Several old wood cuts from Ceppi and Cooper are interesting. It is gratifying to note the absence of manufacturers' names in the cuts of apparatus. The author is most appreciative of the work of others giving full credit and making frequent reference to the original where complete information is to be had.

The author, in his separate star has done the thing as he saw it. He has done his work admirably well, and upon the occasion of the twentieth birthday we offer our heartiest congratulations and best wishes.

ROYALE HAMILTON FOWLER.

STATE BOARD QUESTIONS AND ANSWERS. By R. MAX GOEPP, M.D., Professor Clinical Medicine, Philadelphia Polyclinic. Third edition, thoroughly revised. Octavo volume of 717 pages. Philadelphia and London: W. B. Saunders, 1913. Cloth, 4.00 net; half morocco, \$5.50 net.

That there is a demand among those plugging for state board examinations for a list of the questions asked by the various state boards of examiners is evidenced by the fact that this book has been twice revised and reprinted and is now in its third edition.

Some 650 pages are devoted to questions and answers, and the individual who can answer all the questions should be able to pass almost any state board examination and, theoretically at least, should be well qualified to practice modern medicine. By the same token, a perusal of the questions might convince many a self-satisfied practitioner that there were quite a few things that he had yet to learn.

The questions are classified under the general headings of Physics, Chemistry, Anatomy, Physiology, Pathology, Bacteriology, Materia Medica and Therapeutics, Practice of Medicine, Surgery, Obstetrics, Gynecology, Hygiene. A good index is appended.

For those about to undergo an examination who think they want this sort of book to brush up their knowledge, this is just the book they think they want. And their number is legion as any one who is at all familiar with any medical school's newly baked batch of physicians, surgeons—and specialists—will attest.

A. T. H.

TREATMENT OF CHRONIC LEG ULCERS, A PRACTICAL GUIDE TO ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT. By EDWARD ADAMS, M.D. 122 pages. Cloth, \$1.00. Published by The International Journal of Surgery Company, 100 William Street, New York City.

This little book, containing 127 pages and sufficient half-tones to amply illustrate the text, is a useful work. Chronic ulcers of the leg evidently have not hitherto been considered of sufficient importance or interest to warrant the publication of a book devoted to this subject alone. This novel little work affords complete information. More detailed instructions are found than usually occur in the text books of surgery. Ulcers are first considered from the general standpoints of etiology and treatment. The author then discusses various local remedies which are conducive to successful management of these cases. The necessity of meeting individual requirements is well emphasized. A more extensive consideration of skin grafting would perhaps enhance the value of the monograph.

The author considers, under separate headings, Indolent Ulcer, Epitheliomatous Ulcer, Perforating Ulcer, Varicose Ulcer, and Syphilitic and Tuberculous Ulcers, Symptoms, Diagnosis, Treatment.

An encroachment upon dermatology is necessary in the presentation of Bazin's disease, blastomycosis and actinomycosis.

The work would not be complete without a consideration of phlebitis, which is presented in a concise and instructive manner. The operative treatment of varicose veins is well discussed.

There are a few typographical errors, but in the main the book is well presented and well written. It is recommended and reflects the best of modern teaching.

ROYALE H. FOWLER.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY. FOR Practitioners and Students. By W. EASTERLY ASHTON, M.D., LL.D., Professor Gynecology Medico-Chirurgical College, Philadelphia. Fifth edition, thoroughly revised. Octavo of 1,100 pages, 1,050 original line drawings. Philadelphia and London. W. B. Saunders. 1912. Cloth, \$6.50 net; half morocco, \$8.00 net.

In the fifth edition of this work of Dr. Ashton's a thorough revision has been accomplished and, as before, nothing has been taken for granted. Specific

detail is the watch-word—precision of thought and exactness of description always the aim.

In the words of the author, the arrangement of the book on an anatomic basis permits a discussion of the methods of examining each organ before describing its diseases. This plan enables the practitioner to study methods of examination step by step, and to familiarize himself with the subject in a practical manner.

Bold-faced type marks the beginning of each paragraph—a very effective means of impressing the fact that a new subject is about to be begun. The methodic student will be impressed with the systematic order in which Dr. Ashton discusses a subject and no less will he be struck by the many well-chosen line drawings which serve, very materially, to clarify the text.

In the treatment of gynecologic conditions throughout the work one specific method is clearly given.

The opening chapters of a true gynecologic nature include the affections of the vulva and vagina.

The section following is devoted to the uterus and its appendages. The mechanism of uterine displacements and prolapse is particularly commendable since a knowledge of just how these conditions occur is prerequisite to the successful treatment. The indications and mechanism of the pessary in posterior versions and flexions are well given. The Baldy (i. e. Baldy-Webster) operation for posterior displacements is recommended. No mention is made of any other method of suspending the uterus.

Fibromata of the uterus are classified according to the situation they assume in their development. Illustrations do much to settle in the student's mind just the situation of these various tumors.

In malignant growths of the body of the uterus a warning is sounded of the very great importance of making an early diagnosis.

The subject of ectopic gestation is very thoroughly thrashed out. Dr. Ashton advises immediate operation at the time of rupture or abortion. Hemorrhage is active and the indication here, as elsewhere, is to ligate the bleeding vessels, hence the quicker the better.

The conservative operations on the uterine appendages are discussed in a very guarded manner. Conservatism is strongly advised in every instance where there is a possibility of saving good tissue. Conservatism, unless practiced by capable and experienced operators, will fall short of its application and will be responsible for failures which should be justly placed upon the inexperience or ignorance of the operator.

The section following deals with the affections of the urethra, bladder, and ureters in a very comprehensive manner.

The section dealing with the examination, method of catheterization, abnormal implantation, the injuries and their repair, and the diseases of the ureters constitutes one of the most satisfactory chapters of the volume.

A chapter each on antiseptics in hospitals, the technic of minor operations, the technic of abdominal and pelvic operations, antiseptics in private houses, and the technic of special operations form a section of the book that is invaluable to the student, and particularly to the practitioner who has inadequate hospital facilities. In the section dealing with the technic of special operations a concise description, with a list of the instruments needed for their performance, is given of all the more common gynecologic operations.

A short chapter each on appendicitis and movable kidney concludes the volume.

HARVEY B. MATTHEWS.

DORLAND'S AMERICAN ILLUSTRATED MEDICAL DICTIONARY.

New and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology; with new and elaborations. Seventh revised edition. Edited by W. A. NEWMAN DORLAND, M.D. Large octavo of 1,107 pages, with 331 illustrations, 119 in colors. Contains

over 5,000 more terms than the previous edition. Philadelphia and London: W. B. Saunders Company, 1913. Flexible leather, \$4.50 net; thumb indexed, \$5.00 net.

It has long been the opinion of the reviewer that for handy and convenient every-day use, Dorland's is the best medical dictionary that is published. Its clear, legible type, thin paper, and flexible binding cannot but afford pleasure to everyone who may wish to consult it.

The definitions are clear and concise, and what is the great desideratum in these days of rapid medical advance—the work, by frequent revision, is kept well up-to-date. With the tendency of some medical writers to coin a new medical word with every contribution they make to medical "literature," together with the legitimate new words arising from new developments, it is hardly possible for any dictionary to be complete for any very long period after the manuscript has been sent to press. The editor has done well in keeping this dictionary so nearly abreast the output of the medical word-mint.

The eponymic disease family occupies nearly eight columns of fine print—from Adams' disease to Woillez's disease. At the present rate it will not be long before all family names are exhausted; then we suppose we will have the finer classification of Jones' disease, Cassius H. Jones, Jr.'s disease, Napoleon B. Jones' disease, etc., etc. Taking the second letter of the alphabet, we find: Baelz's, Balfour's, Ballet's, Ballingal's, Bamberger's, Banti's, Barlow's, Basedow's, Bateman's, Bayle's, Bazin's, Beard's, Beau's, Beauvais', Bechterew's, Begbie's, Beigel's, Bell's, Bergeron's, Berlin's, Bernhardt's, Beurmann's, Billroth's, Blocq's, Boeck's, Bonfills', Bouchard's Bouillaud's, Bouveret's, Breda's, Breisky's, Brentonneau's, Bright's, Brill's, Brinton's, Brocq's, Brodie's, Brown-Sequard's, Bruck's, Bruhl's, Brun's, Buhl's, Busquet's diseases. What meaning does the name of more than half a dozen of them convey to you? "Berlin's disease" is not megalomania but "traumatic edema of the retina" and "Bernhardt's disease" is "meralgia paræsthetica in the leg." Oh, yes, you say to yourself, and the divine Sarah finally had to have the limb amputated. But your inference is wrong, for you turn back to "Bernhardt's disease" and you find "Martin Bernhardt, neurologist in Berlin, born 1844," and are referred back to the disease family of words. For the sake of brevity in description a certain mechanical device or invention or method may be designated by the name of the originator, but why a disease? Really, all these varied eponymic diseases should have but one dictionary definition—egomania.

But to return to our muttons and the book under review. In the two years' interval since the publication of the previous edition, over 5,000 new terms have been added and defined. The many tables and plates add greatly to the value of the work; for instance, fourteen pages of tables and three colored plates are devoted to "arteries."

We can heartily recommend this dictionary for purchase by anyone who wishes a fine, reliable, and up-to-date work of this nature.

A. T. H.

**A HISTORY OF LARYNGOLOGY AND RHINOLOGY.** By JONATHAN WRIGHT, M.D., Director Department of Laboratories, Post-Graduate Hospital. Second edition, revised and enlarged. Lea & Febiger, Philadelphia and New York, 1914.

This is a second edition of Jonathan Wright's "The Nose and Throat in Medical History," a work first published without date or place, but really in St. Louis, 1902, this first edition having been reprinted from sheets published by Dr. Wright originally in the *Laryngoscope*. The work on its first appearance excited much interest, not only among laryngologists, but among all practitioners interested in the history of medicine, remote or recent. A book on medical his-

tory treating so narrowed a field as this, which includes but one department of medicine, has this advantage: that like the rift in a mountain it shows at a glance the successive strata of its composition, and the rest of the mass, though not perceived, is suggested even if not positively demonstrated.

It is interesting to note that those ages of the past which were rich in culture of the arts and sciences produced likewise the physician of the greatest skill, while the degeneracy of the arts and of culture in the middle ages went step by step with a profession of the healing art which degenerated into ignorance and superstition. Dr. Wright has sought for the origin of his specialty and has industriously examined the literature of general, as well as medical, history in an effort to trace its development to the present time. In the present edition extensive additions have been made which cover the new discoveries, new operations, improvements in technique, and the progress in general which has marked the dozen or more years of unprecedented progress in the department of laryngology and rhinology during that time.

WILLIAM C. BRAISLIN.

**THE ELEMENTS OF BANDAGING AND THE TREATMENT OF FRACTURES AND DISLOCATIONS.** By WILLIAM RANKIN, M.A., M.B., Ch.B., Dispensary Surgeon, Western Infirmary, Glasgow, Extra Hon. Asst. Surgeon, R.H.S.C., Glasgow, with 68 original illustrations. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York: 1913.

This little volume contains 116 pages and sixty-eight original illustrations, necessarily subjects are dealt with in a very elementary way. These notes, published in book form, are the outcome of demonstrations given to students, and the methods described are those which have proved helpful in preparing them for practical examinations.

Many little points, not conveniently included in the large text books, may be found in this little manual. The author duly emphasizes the value of anesthesia in the diagnosis and treatment of fractures and dislocations.

ROYALE H. FOWLER.

**ARTIFICIAL PARTHENOGENESIS AND FERTILIZATION.** By JACQUES LOEB, Member Rockefeller Institute for Medical Research. Translated from the German by W. O. REDMAN KING, B.A., Assistant Lecturer in Zoology at the University of Leeds, England. Supplemented and revised by the author. University of Chicago Press, Chicago. Price, \$2.50 net; \$2.68 postpaid.

This is a revision by Loeb of a book published by him in Germany in 1909 and originally translated by Mr. W. O. R. King. The revision has been made necessary because of new observations. The analysis of the mechanism by which the spermatozoon causes the animal egg to develop, and the substitution of physiochemical agencies for the male sex cell, are the subjects set forth in this book. Despite the highly technical character of the work, Loeb presents it in his usual fascinating style. It is a remarkable record of painstaking, original work in a mysterious field by one of the wizards of science.

A. C. J.

**SURGERY; ITS PRINCIPLES AND PRACTICE.** By ASTLEY PASTON COOPER ASHHURST, A.B., M.D., F.A.C.S., Instructor in Surgery Univ. Pennsylvania; Asso. Surg. Episcopal Hosp., Asst. Surg. Phila. Orthopedic Hosp. Octavo, 1,141 pages, 7 colored plates and 1,032 illustrations. Cloth, \$6.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

The author gracefully dedicates this volume to Dr. Richard H. Harte, his teacher, chief and friend.

The work is an excellent foundation upon which students and practitioners may build their surgical superstructure. Surgical Pathology, the mode of origin of injury and disease, diagnosis, indications for treat-

ment and operative surgery are emphasized. In general terms the material is well arranged, and set forth clearly and concisely. Statements are accurate and to the point. The more important operations are well described in detail, at least one method of procedure is given. The well recognized specialties, the Surgery of the Eye, Ear, Nose and Throat are omitted, but a consideration of Orthopedics, Gynecology and Genito-urinary Surgery is included in so far as they interest the general surgeon.

Dr. Ashhurst's work is scholarly and deserves a place in the first rank of such publications.

After careful perusal critical analysis reveals to the reader that this work will allow of little criticism except in a favorable way; that the volume is conservative and teaches much; that it upholds the reputation of an Ashhurst and further solidifies the reputation of the author as a teacher. His surgical judgment is sound, his sense of values and selections are well exhibited.

The illustrations are excellent, abundant and appropriate.

ROYALE H. FOWLER.

**CANCER OF THE BREAST.** An experience of a series of operations and their results. By CHARLES BARRETT LOCKWOOD, F.R.C.S. (Eng.), Consulting Surgeon St. Bartholomew's Hospital, etc., etc. London: Henry Frowde, Oxford University Press, 35 W. 32d St., New York City. Hodder & Stoughton, Warwick, E. C., 1913. Price, \$3.00.

This volume includes the author's own experience in dealing with cancer of the breast. The work is unique in that it presents to the reader one or more chapters on the history, physical examination, pathology, choice of operation and end results in a very large series of concrete cases.

The deductions the author has made relative to the extreme value of a complete pathological examination in every case of tumor of the breast and the necessity for a radical operation whenever the slightest evidence of malignancy can be demonstrated by microscopical examination, are entirely substantiated by the ultimate results it has been possible to obtain in a large percentage of his cases.

The illustrations describing the different skin incisions, types of operations, and scheme of the lymph vessels and lymph glands are very instructive.

H. T. LANGWORTHY, M.D.

**ANIMAL EXPERIMENTATION AND MEDICAL PROGRESS.** By WILLIAM WILLIAMS KEEN, M.D., LL.D., Professor Emeritus of Surgery, Jefferson Medical College, Philadelphia, with introduction by CHARLES W. ELIOT, LL.D., President Emeritus, Harvard University. Price, \$1.75 net. Houghton, Mifflin Co., Boston and New York; The Riverside Press, Cambridge. 1914.

Professor Keen's book consists of a number of addresses and papers on animal experimentation and its beneficent results, the first of which was prepared in 1885, since which time he has been indefatigable in presenting to the profession and the public the real facts of the subject and in exposing the "unreasonableness, inaccuracy, and indifference to truth and justice manifested by the antivivisectionists in selecting the premises of their argument against animal experimentation." The book is a most valuable epitome of the surgical progress of the last forty years made possible by such experimentation, and it is to be hoped that it will do much toward dispelling the misunderstandings that have arisen in the minds of many with respect to this phase of science. It cannot, of course, be expected to alter the viewpoint of the women who, in a letter to Dr. Keen, expressed the hope that his mother would die in the most terrible torture, and that her soul would never know rest for having given life to such a vile monster.

A. C. J.

**THE JUNIOR NURSE.** By CHARLOTTE A. BROWN, R.N., Instructor Boston City Hospital; late Superintendent Hartford Hosp. Training School. 208 pages. Illustrated. Cloth, \$1.50 net. Lea & Febiger, Publishers, Philadelphia and New York. 1914.

This book is a primary test-book for the student nurse. We find it to be admirably adapted for its purpose, all the subjects which it is essential that the pupil nurse should master being clearly presented. A useful glossary is placed at the end of the book.

J.

## In Memoriam

H. SEYMOUR HOUGHTON, M.D.

MEMORIAL AND RESOLUTIONS ON THE DEATH OF DR. H. SEYMOUR HOUGHTON, READ AND ADOPTED AT THE STATED MEETING OF THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, DECEMBER 28, 1914.

During a period of seven years it was the good fortune of our Society to have the official help of Dr. H. Seymour Houghton. He served as member of the Committee on Discipline, as Second Vice-President, as First Vice-President, as President, as Chairman of the Board of Censors, and as a member of that Board.

During this period problems of great gravity arose. It was necessary to hold protracted and oft repeated committee conferences, and special meetings of the Society itself were held. The well being of members of the Society and the dignity of the profession as represented in the Society was in large measure dependent upon the way in which these problems were met.

Dr. Houghton gave to this work a combination of good qualities which is seldom found—absolute integrity, sound judgment, broad sympathy, great executive ability, high professional attainment. These qualities were unsparingly given to the Society. But for his magnanimous nature and his far-seeing judgment, the troublous times in which he labored might have been far more disturbing for the Society and the profession which it represents.

The individual members of the Society are sad in the loss of a warm personal friend and the Society as a whole, sorrows at the loss of a most valuable officer and adviser.

It is the wish of the Society to record its feeling of sadness and to express to the members of Dr. Houghton's family its heartfelt sympathy.

CHARLES N. DOWD, M.D., *Chairman,*  
BROOKS H. WELLS, M.D.,  
CHARLES G. KERLEY, M.D.,

*Committee.*

## Deaths

JOSEPH F. BLOODGOOD, M.D., Flushing, died March 12, 1915.

THOMAS CARNEY, M.D., Schenectady, died February 6, 1915.

EDWARD D. CLARK, M.D., Buffalo, died February 13, 1915.

S. BOYCE CRATON, M.D., Syracuse, died February 26, 1915.

EDWIN CROCKER, M.D., Narrowsburg, died March 26, 1915.

EDWARD S. PECK, M.D., New York City, died March 25, 1915.

WALDRON BURRITT VANDERPOEL, M.D., Summit, N. J., died March 9, 1915.

PHILIP M. WOOD, M.D., Jamaica, died March 27, 1915.

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## ORATION ON MEDICINE

### THE GENERAL PRINCIPLES AND MECHANISM OF INFECTION AND IMMUNITY.\*

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#### INTRODUCTION.

EACH and every living thing must feed, assimilate and eliminate. Living matter cannot continue in active life without performing these functions. There are certain resting forms in which these functions are, for the time, held in abeyance. Such are, eggs, spores, seeds and reproductive cells. These organisms possess only potential life; they are not in active life. A grain of corn or wheat, or any vegetable seed, contains a germ cell, a store of food and an enzyme. When placed in the ground, under suitable conditions of temperature and moisture, the enzyme begins to split up the stored food, the germ cells begin to utilize the split products and potential life awakens into active life. The re-vivified germ cell is now able to feed upon the constituents of the soil, the stalk grows and the grain or seed is reproduced. The spores of anthrax are only potentially alive and active life begins anew only in the presence of proper nutriment. The granules into which certain other bacteria are changed in the absence of food are further examples of resting forms. Ova, whether those of lower or higher animals, after stimulation by the spermatic cells, and under proper conditions, begin to develop into active life. In all cases life in one form or another is, potentially at least, continuous.

No thing in active life remains in a condition of equilibrium. It absorbs, assimilates and eliminates. Metabolism is a life function and there can be no active life without it. Indeed, it is

metabolism, active and latent, that distinguishes between living and dead matter. When matter becomes endowed with this function, it is no longer dead, but is alive. No thing in active life can be conceived of as existing alone. It must have food or die.

The morphological unit of life is the cell, although the physiological unit is the molecule or the group of molecules essential to the cell. All living things are essentially proteins. The cell may contain carbohydrates, fats and extractives, but the functions of life reside in its protein molecules. Each kind of life must consist of its own specific proteins and these are as many kinds of proteins as there are kinds of cells. It follows that proteins are specific. Those of the colon bacillus are not identical with those of the typhoid and differ more widely still from those of the tubercle bacillus. Relationship between varieties and species depend upon similarity in the chemical constitution of the molecules. The essential proteins of wheat and barley are not identical, but are more closely related in chemical structure than are those of barley and those of pumpkin seed.

All cells, so long as they are in active life, must feed. Otherwise, they cannot grow and multiply. This is equally true of cells, which have an individual existence and constitute unicellular forms of life, and of those which have a communal life and exist in the organs of multicellular beings, such as man. A living cell can feed only on that with which it comes in contact. Some of the cells of man's body, such as the leucocytes, can go in quest of food, while others are fixed and must depend upon what is brought to them.

Each cell feeds by means of its enzymes which split up the pabulum into blocks which can be fitted into its molecular structures. Each kind

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

of cell must have its own specific ferment or ferments and there are as many kind of ferments or enzymes as there are kinds of cells. There are enzymes which split up carbohydrates, known as diastases, and those which split up fats, known as lipases, but in our studies of infection and immunity, we are especially concerned with those that split up proteins, known as proteases or proteolytic enzymes or ferments. These enzymes are specific in two senses; first they are products of specific cells and second they can act only upon protein of certain chemical structures. It must be evident that a cell can feed only upon that material which is digestible by its enzymes. This is true of single cells and of multiple cells. Horn contains proteins and other nitrogenous substances, but man cannot live upon it because the enzymes of his alimentary canal cannot digest it. Only that which its enzymes can properly prepare for assimilation is food for the organism, whether it be uni- or multicellular. With this understanding of the conditions under which cells grow and multiply we are ready to study some of the phenomena of infection. In doing this we will confine ourselves to bacteria.

#### BACTERIA.

There are some widely prevalent views concerning bacteria which in the writer's opinion are quite erroneous. It is generally stated that bacteria are low forms of plant life. This belief is founded upon an early observation that they are not readily soluble in dilute acids or alkalis. Is this enough to justify their classification as plants? Hair, skin and horn are not readily soluble in dilute acid or alkali and still they can hardly be called plants. Plant cells, generally at least, contain cellulose; bacteria do not. Plants, under normal conditions, take in carbonic acid and give off oxygen; bacteria absorb oxygen and give off carbonic acid. Many think that bacteria contain no nuclei, because there is no differentiation in staining, but it should be remembered that their staining properties show that they are practically wholly composed of nuclein. Some think that they are of simple chemical structure, because morphologically they are simple. The writer and his students have shown that chemically bacteria are quite as complicated and as highly developed as are the cells of man's body. Functionally they are highly developed. It is important to hold this in mind in studying the contests between bacterial and body cells, which so often end in the discomfiture of the latter.

Bacteria live and multiply through the activity of their enzymes. Their extracellular enzymes split the pabulum within their reach into proper blocks and their intracellular enzymes fit these blocks into the bacterial molecule. It must be plain that a bacterium, whose enzymes cannot act upon body proteins, cannot infect that animal. Such a bacterium may grow outside the animal body, feed upon dead material and elaborate a poison which may harm the animal. Such a

bacterium is the bacillus botulinus. The peptonizing bacteria of milk so change the milk proteins that they are absorbed through the intestinal walls of infants and are further digested in the blood and tissues with the formation of poisons which cause the symptoms and lesions of cholera infantum and the other diarrhoeal diseases of infancy. During intrauterine life, all the processes of digestion are parenteral, i.e., they do not occur in the intestine but in the blood and tissues. In infancy the walls of the intestine are easily permeable and parenteral digestion continues, especially when the food proteins are altered by bacterial growth. In rare cases of summer diarrhoea, casein but little altered, has been detected in the blood by biological tests. Bacteria which cause disease by the elaboration of toxins or poisons in foods before they are taken into the body are known as toxigenic organisms. This term was proposed by the writer many years ago.

#### BODY CELLS.

These live, like the bacterial cells, by means of their enzymes which also are extra—and intracellular. The former cleave the pabulum properly and the latter fit the blocks into the molecules. The feeding cells are not confined to the leucocytes. All the living cells of the body, so long as they are alive, feed. They eat, assimilate and eliminate. In the higher animals, including man, the gross digestion for the whole is done in the alimentary canal. This is known as enteral digestion. The special preparation of food for the cells of the different organs, however, is done by their own specific enzymes and this process is known as parenteral digestion. Moreover, occasionally proteins in small amounts pass from the alimentary canal into the lymph and blood without complete digestion. Fine bits of organic matter are inhaled and find their way into the system without being subjected to any form of enteral digestion. Finally and of the greatest importance in the present study, living proteins, known as bacteria, find their way into the tissues. These not only have escaped enteral digestion, but they are capable of growth and multiplication, and if their development in the body is prevented it must be through parenteral digestion. Whether they are engulfed by phagocytes or destroyed by the fluids it is in either case parenteral digestion. It must be evident that parenteral digestion is the big and deciding factor in most cases of infection. If it fails or if it is slow in procedure, the invading bacteria may multiply. If it proceeds promptly and efficiently the invaders which under natural conditions are few in number, are destroyed before they can multiply and the body is protected. Now, we have the great problem of infection and immunity fairly before us. It is a contest between bacterial and body cells and as we have seen, they are armed with similar weapons. The bacterial cells have their enzymes, poisons and toxins. The



body cells have their enzymes, bactericidal and bacteriolytic agents, opsonins, and phagocytes. The phagocytes constitute the mobile army of the defense and the fixed cells elaborate destructive weapons. Which of these bears the brunt of the defense depends upon the armament of the invader.

Whether a given bacterium is pathogenic to a given animal or not depends essentially upon two things. First, can it feed upon the proteins of that animal body? If it cannot, it can do no harm. Second, can the cells of the body destroy the invading cells before they can multiply?

#### THE PHENOMENA OF INFECTION.

It should be clearly understood that only a living thing can infect. It must not only be alive, but it must be able to multiply in the animal body. It is true that the injection of diphtheria or tetanus toxin into an animal may cause all the symptoms and lesions of disease, but this is an artificial procedure, and, besides, the toxin is the product of bacterial growth. In infectious disease it arises when foreign cells find their way into the body and multiply to the detriment of the body cells. Simply carrying virulent bacteria on the surface or in the cavities of the body does not constitute infection. It is not rare to find tubercle bacilli on the hands of those who care for others who are ill of this disease. According to Flüge seventy per cent. of those in houses where there is a case of epidemic meningitis carry the organisms. In a schoolroom in which a child has developed diphtheria, thirty per cent. of all the children may have the diphtheria bacillus in their throats and are not infected. In order to develop infection, the bacterium must feed upon the body. Carriers of infection are of importance to the epidemiologist, but they are not necessarily infected. The bacterium must not only feed upon the animal tissue, but it must multiply. The essential difference between saprophytic and pathogenic bacteria is that the latter can multiply in the animal body while the former cannot. Saprophytic bacteria contain in their cellular substance just as much protein poison as the pathogenic organism do and it is easy to kill an animal by injecting a relatively large amount of them into the abdominal cavity, but this is not infection. A bacterium is not pathogenic to a given animal unless it can convert that animal's proteins into its own proteins.

Saprophytic bacteria are speedily digested by the enzymes in the blood and tissues of the body, and if they be injected in large amount the protein poison set free may be sufficient to quickly kill the animal. So great is the bacteriolytic action of the blood that even some pathogenic bacteria do not infect when injected directly and wholly into the blood current. This is true of the bacillus of symptomatic anthrax. A dose which infects when administered subcutaneously, fails when given intravenously. The cholera bacillus is harmless when introduced subcutaneously in

doses which would infect by the intestine. In the first instance, it is speedily killed by the bactericidal constituents of the tissues; in the second it grows and multiplies in the intestine where it does not come in contact with the germicidal agents.

There are many conditions which influence the capability of bacterial growth in the animal body. A given bacterium may be pathogenic to one species of animal and without effect upon another. Some are active in mixed cultures, one bacterium being of assistance to another. Some grow in certain tissues of the body and not in others. The number of bacteria introduced into the animal is an important factor. One anthrax bacillus may kill a mouse and one tubercle bacillus may have a like effect upon a guinea-pig, but these are exceptions and whether an infection results or not depends, in most instances, in part upon the number and virulence of the organisms introduced.

While the blood has a marked bactericidal action on some bacteria, it forms an excellent culture medium for others. Virulent streptococci, plague and tubercle bacilli grow abundantly in the blood and kill more promptly the sooner they find their way into the circulation. Quite naturally, many bacteria grow most vigorously in injured and necrotic tissue on account of the lessened resistance. The readiness with which streptococci takes possession of areas already weakened by cancer, tuberculosis or syphilis is an illustration.

#### INCUBATION.

The period of incubation of an infectious disease is the time interval between the introduction of the infecting agent and the first appearance of the symptoms of the disease. This varies greatly in different diseases and for the same diseases in different animals. With the same disease in the species there are also variations, but not so marked. For instance one swallows typhoid bacilli, he does not develop fever the same day or the next, but as a rule between the sixth and tenth day. In some individuals the period of incubation for this disease may be longer. During this period there is no recognizable disturbance in the health of the individual, either subjectively or objectively. He considers himself well and attends to his usual duties, and yet this is an important and critical time in the development of the infection. The bacilli are growing and multiplying enormously in the man's body. They are converting body proteins into bacterial proteins, native into foreign proteins, and this goes on without the host being conscious of it. The ferments of the bacterial cells are fitting the body proteins into the cellular molecules of the bacteria. During the period of incubation the bacterial cells supply the enzymes, the body proteins constitute the substrate, the process is synthetical and constructive, no poison is set free and consequently no symptoms are

manifest. It follows that the multiplication of the typhoid bacillus in man's body is not the direct cause of the symptoms of the disease. There is no evidence that growth and multiplication of the bacilli proceed at the expense of, or directly cause injury, to body cells. The bacilli feed upon the simple, soluble proteins of the body. A tubercle bacillus passes through the intestinal wall and leaves no lesion. A plague bacillus may penetrate the skin of an animal and make no visible alteration. The rate at which the virus multiplies during the period of incubation is an important factor in determining the final outcome. The more virulent the virus, the more rapidly does it multiply and this means a larger amount of body protein converted into bacterial protein. The phenomena of the period of incubation may be studied in a guinea-pig into the abdominal cavity of which a fatal dose of a virulent culture of the colon bacillus has been injected. In this experiment the incubation period is from eight to twelve hours during which time the infected animal is in its behavior undistinguishable from its untreated fellows. However, if a drop of the abdominal fluid be taken out from hour to hour it will be seen that the bacilli are multiplying rapidly.

#### THE DISEASE.

In some cases the period of incubation passes abruptly, in others more gradually, into that of the active disease. Symptoms, both subjective and objective, develop and indicate a more or less marked departure from health. In some diseases there is a chill, which may vary greatly in severity and this is followed by fever. Evidently something has happened which disturbs physiological processes. The body cells have begun the contest against the invaders. Since the invasion began they have been preparing for the war and now the battle has begun. The bacilli have gained entrance and multiplied at the expense of the soluble proteins of the body because the animal cells were not at first prepared to combat them. Now they have developed bactericidal and bacteriolytic ferments and opsonins, possibly antitoxins, and with these the further development of the bacteria is to be contested. When the infecting organism is a toxin producer, like the diphtheria or tetanus bacillus, it is not the cellular substance of the bacteria which directly and immediately endangers the body cells, so much as its soluble product, the toxin. In this case the contest is decided by the ability of the body cells to elaborate and make available enough antitoxin to neutralize the bacterial toxin. In this case, the therapeutic administration of antitoxin has secured to curative medicine its great triumph, and success or failure depends upon the early administration of this magical cure in sufficient amount. The cells of the horse have been trained to produce this body and now it is poured into the blood current of the child to save its cells from destruction. The diphtheria bacilli contain

a cellular poison, quite different from the toxin, but since the bacilli, except in small numbers, are not in the child's blood and tissues, but in its throat, the cellular poison may be neglected, for as a rule the few in the body do not contain enough poison to endanger the life of the child. Cure, then, depends upon the neutralization of the toxin before it has done irreparable harm.

When the infecting bacterium is one best combated by phagocytes the body cells supply opsonins which, in some way yet unknown, render the invaders less resistant to the leucocytes. In these cases the result depends upon the effectiveness with which both the fixed and motile cells of the body perform their functions. One of the important factors is the number as well as the virulence of the invading bacteria at the time when the contest begins. The greater the number, the more must the phagocytes devour and feeding is a limited function. The more virulent they are, the less effective will be the opsonin. Rosenow has shown that the opsonins are not effective against the more virulent strains of streptococci and that infection with these generally proves fatal. It is worthy of note that bacteria devoured by phagocytes do not endanger the life of their host to the extent and in the same way as do those who suffer extracellular digestion. In the latter instance, the cellular poison of the bacteria is set free and in its death it becomes most dangerous to its host.

By far the larger number of bacteria which infect man do not elaborate soluble toxins and for these we can have no antitoxin. Of the other pathogenic bacteria there are many which, in first infections at least, are not to any large extent devoured by phagocytes. The members of this large class, which cannot be met with antitoxins or by stimulated phagocytosis, must be dealt with by bactericidal and bacteriolytic enzymes. The potent poison which they contain is set free and exerts its deleterious effect which is determined by the rapidity with which the bacterial cells are disrupted. It must be evident that the development of powerful bacteriolytic enzymes at a time when the body is filled with bacteria would be most disastrous. The faster the invaders are destroyed, the more danger is there to the host. This is well illustrated in typhoid fever in which the bacillus produces no soluble toxin, and consequently there can be no antitoxin developed and in which there is no increase in the phagocytes. The greatest misfortune that happens in the progress of typhoid fever is the rapid development of a powerful bacteriolytic enzyme and the speedy destruction of the invading bacteria in large numbers. This is true of plague and typhus as well as typhoid fever. It does not apply to diseases due to soluble toxins, such as diphtheria and tetanus, and probably not to those combated exclusively by phagocytes, if there be such.

The assertion has been made that the infectious diseases have benefitted the race by the

destruction of the unfit. This idea I have combated most vigorously since our study of typhoid fever in the army in 1898. My colleagues and I found that out of 9,481 soldiers who had previously been on the sick report and could not be regarded as possessing standard health, 648, or 6.8 per cent., contracted typhoid fever; whereas, out of 46,384 men who had no preceding illness, 7,197, or 15.3 per cent., developed typhoid fever. More than ninety per cent. of the men who developed typhoid had no preceding intestinal disorder. Under ordinary conditions the strong, busy man, especially the one whose activities demand wide excursions from his home, is more likely to become infected than the one whose sphere of action is more limited on account of infirmity. The reason for this is too obvious to need statement, and it follows that more men than women and more adults than children have typhoid fever. Moreover, the case mortality is greater among the strong, because death in this class of infectious diseases is often due to the rapidity with which the invading organism is broken up by the secretions of the body cells and the protein poison made effective. From this I have concluded that contagion, like war, destroys the very flower of the race. This view is sustained by the historians of the pestilences of former times.

Thucydides, in his description of the plague, at Athens, says: "Moreover, no constitution, whether in respect of strength or weakness, was found able to scope with it; nay, it swept away all alike, even those attended to with the most careful management." Procopius, in his account of the Justinian epidemic, states that youth was the most perilous season, and females were less susceptible than males. Cogan, in describing the outbreak of typhus at Oxford in 1577, writes: "The same kind of ague, raged in a manner over all England, and took away very many of the strongest sort, and in their lustiest age, and for the most part, men and not women and children, culling them out here and there, even as you would choose the best sheep of a flock." In his account of the plague of 1665 in London, Boghurst makes the following statement: "Of all the common hackney prostitutes of Luteners-lane, dog-yard, cross-lane, Baldwins-gardens, Hatton-gardens and other places, the common criers of oranges, oysters, fruits, etc., all the impudent drunken, drubbing bayles and fellows and many others of the *rouge route*, there is but few missing—verifying the testimony of Diemerbroech that the plague left the rotten bodies and took the sound." Like testimony comes from an account of the plague at Moscow: "Drunkards and persons of feeble temperament were less subject to attack." Davidson observed that typhus fever was more frequent among the robust than the weak. He states that out of 429 cases the spare and unhealthy taken together made only about seven-tenths per cent. He adds that the death rate

among the poor was one in twenty-three, while among the well to do, it was one in four. The greater mortality of typhus among the higher classes has been noted by Barber and Cheyne and by Braken. Hurty nearly a century ago wrote: "A fever which consigns thousands to the grave, consigns tens of thousands to a worse fate—to hopeless poverty, for fever spares the children and cuts off the parents, leaving the wretched offspring to fill the future ranks of prostitution, mendicancy and crime." Creighton says:

"The best illustrations of the greater severity and fatality of typhus among the well to do come from Ireland in times of famine, and will be found in another chapter. But it may be said here, so that this point in the natural history of typhus may not be suspected of exaggeration, that the enormously greater fatality of typhus (of course, in a smaller number of cases) among the richer classes of the Irish families, who had exposed themselves in the work of administration, of justice, or of charity, rests on the unimpeachable authority of such men as Graves, and on the concurrent evidence of many."

In the active stage of disease due to bacterial invasion of the body, the body cells supply the ferment, the bacterial cells constitute the substrate; the process is essentially destructive and analytical; complex cellular proteins are split into simple soluble bodies; the protein poison is set free, exerts its deleterious effects on the body cells and disturbs the health; the evidence of infection rises to the plane of clinical observation; the symptoms of the disease become manifest and the contest between bacterial and animal cells continue until one or the other holds possession.

It should not be understood that there is always a sharp line of demarcation between the period of incubation and the appearance of active disease. The bacterial growth may be extending into new parts of the body coincidentally with its destruction in other regions.

#### FEVER.

All bacteria are capable of inducing fever and this is a most constant accompaniment of infections. Fever is not directly due to the growth of bacteria in the body. It is not in evidence during the period of incubation when bacterial growth is most abundant. The early progress of tuberculosis is without fever, because at this time the number of bacilli in the body is few and most of these are living. It is not until the body becomes sensitized against the invading organism and begins to digest and destroy it that fever makes its appearance. The face may be covered with acne pustules, each of which contains streptococci, and still there is no elevation of temperature, because the cocci are not reached and digested by the bacteriolytic enzymes of the blood and lymph. The fever of infection results from the parenteral

digestion of the bacterial proteins. Many years ago Gamaleia showed that fever follows the parenteral introduction of dead as well as living bacteria, either pathogenic or non-pathogenic. He concluded that fever is not a phenomenon of bacterial growth in the body. Furthermore, he found that the less virulent the organism, the higher and more persistent is the fever. A rabbit inoculated with the anthrax bacillus runs a fever for only a few hours, when the temperature falls and death results, while one inoculated with a highly attenuated anthrax culture (the second vaccine) shows fever for three days and then recovers. With a highly virulent culture there may be but little or no elevation of temperature and death comes within from five to seven hours after inoculation. The febrile process is not a result of the activity of the bacteria, but on the contrary is due to a reaction of the body against their presence and marks their destruction.

More recently it was shown by experiments in the writer's laboratory that fever can be induced in animals by the subcutaneous injection of proteins of diverse origin and structure, and that by modifying the size and frequency of the dose, the type of fever can be determined at will. By injecting egg-white into rabbits and by regulating the size and interval between doses, one may induce an intermittent, remittent, continued or acute fever. In the last mentioned the temperature can be carried to 107° F. with a fatal termination. Not only fever but its accompaniments also may be developed. In the continued fever, thus induced, there is the morning fall and the evening rise so constantly seen in typhoid. There is loss of appetite with lassitude, gradual emaciation, decreased urinary output and increased nitrogen elimination. Protein fever, which includes all infective and practically all clinical fevers, results from parenteral digestion. In this process the animals' cells supply the ferment and the foreign-protein constitutes the substrate. The foreign protein may enter the body living or dead, with or without form. It may be detached and dead tissue from the animal's body, as after burns. It may be absorbed from some mucous surface, as in hay fever. It may be artificially introduced, as in serum disease. It is usually a living protein, as in the infectious diseases.

There are other causes of fever, but that of the infectious diseases results from the parenteral digestion of the infecting agent by specific secretions elaborated by the body cells. It is a phenomenon of the disposal of foreign and harmful material and it must be recognized as beneficial. However, there is a point above which it becomes a danger *per se*. In parenteral digestion the following sources of heat production must be evident: (1) The unaccustomed stimulation and consequent increased activity of the cells which supply the enzyme must be the source of no inconsiderable increase in

heat production. (2) The cleavage of the foreign protein increases the heat liberation. (3) The reaction between the digestion products and the tissues leads to increased heat production. I regard the first and third as the important sources of the overproduction of heat in the infectious diseases.

There are many conditions affecting the course of a fever and some of these may be mentioned. Some viruses sensitize more quickly and thoroughly than others. It is possible that the living bacterial cells, so long as they are living, do not sensitize. Some of the bacterial protein must pass into solution before cell penetration, which seems essential to thorough sensitization, can occur. A living colon bacillus of not more than twenty-four hours growth, when injected intra-abdominally in a guinea-pig, requires about ten hours to sensitize. With dead bacilli the time is reduced to half, while with old antolysed cultures, in which the sensitizing group is already in solution, the time is further shortened. Some pathogenic bacteria, like the tubercle bacillus, have been so long parasitic that they have learned to protect themselves by deposits of fats and waxes. Others form capsules which serve a like purpose. In this way they are probably protected to some extent against the destructive enzymes elaborated by the body cells. In all the infectious diseases the destruction of the invading organism is modified and delayed by the altered relation between ferments and substrate and the accumulation of fermentative products. The blood is a highly active digestive fluid with a finely adjusted balance between ferment and antiferment, which will soon be better understood and the solution of this problem will add another triumph to scientific medicine. When the ferment in the blood is suddenly activated immediate death results as is seen in anaphylactic shock. When properly regulated, this delicate mechanism protects against harmful bodies, both these introduced from without and those generated within.

### THE WORLD WAR AND MARITIME COMMERCE.\*

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**W**HEN the present war broke upon Europe, it was to be expected that it would affect the United States in many interests. Civilization had brought about an interdependence of nations unprecedented in the world's history.

Our financial system was the first to experience the shock. The nerves of this system are the electrical conductors of intelligence and as these conductors have practically annihilated time our system of credit felt the shock even before the blow was struck. Our financiers faced

\* Read before the Medical Society of the County of Westchester, at Yonkers, N. Y., January 19, 1915.

the great economic danger with a courage and intelligence of which we may all feel proud. The next point at which we were touched was in our great over-sea commerce. Some markets were closed to us and others were created for us. The rights of belligerents with regard to contraband and the rights of neutrals on the high sea vexed the free interchange of commodities. The readjustment necessary here is a task requiring the services of statesmen and experts in international law and they have already taken it up.

There is a third condition of war that affects all civilized countries. It presents a problem with which members of the medical profession must deal. Throughout all history disease has followed in the track of war. The conditions of camp life and the wretchedness of devastated countries have always been productive of dreadful epidemics. In conflicts in which Asiatic and East European troops have been involved, a choleraic infection is nearly always present. Among the western peoples warfare has given rise to epidemics of typhoid and typhus. Therefore, when the present war broke suddenly in the early days of last August, the attention of sanitary authorities was immediately attracted to the pathogenic problems it created.

In our country these problems lie within the province of that department of preventive medicine known as maritime quarantine. Our task is to prevent the admission to our country of infections having their source in the countries affected by this war.

Our principal foe will be cholera. That dread scourge holds the place of eminence in the grim ranks of the major epidemics. It is the infection entitled to primary consideration among the pathogenic consequences of this catastrophic collision of nations. In order to understand the part it is now playing in the eastern theatre of the war and the part it may later play in the western field of operations, it will be necessary to examine conditions precedent to the outbreak of hostilities. The cholera epidemics in southeastern Europe during the years 1910 and 1911 were checked by intelligent work on the part of the public health authorities of Italy and Austria. With those epidemics we were much concerned in the summer of 1911 when the visitation touched our shores. It was hoped after 1911 that Europe had done with cholera, but the outbreak of the war between the allied Balkan nations and Greece on one hand, and the Turkish Empire on the other reintroduced the scourge. It is probable that the infection was carried from Asia Minor by the troops of the Turkish Government. It soon became violently epidemic in military camps on both sides and after the war it remained active in the Turkish Empire, the Black Sea territories of Russia, the Balkan States, Greece and the territory of the Austro-Hungarian Empire, claiming a victim as far north as Vienna. Energetic public health work was undertaken and successfully prosecuted.

The last case of cholera was reported in Servia in November, 1913. In December Austro-Hungary and Roumania were reported free of cholera. Greece had already been cleared of the scourge, and at the time of the outbreak of the war in August it persisted only in European Turkey and in certain provinces of Russia. In Podolia, a Russian province close to the Galician frontier, it suddenly became active. The Podolia outbreak was of great importance not only because of its violence but because it lay in the path of the Russian military operations against Austria soon to begin. Two hundred and fifty-four cases and eighty-five deaths from cholera were reported in Podolia between July 19th and August 2nd. From this infected province into the neighboring Austrian province of Galicia the salient of the Russian offensive developed soon after the opening of hostilities. Within a few weeks more or less definite reports of cholera infection in the opposing armies engaged in that campaign became frequent. Press reports indicated cholera in Vienna among the wounded brought in from the front. Later reports told of infections in many places and among others in the detention camps in which prisoners of war are held. Before the cold weather intervened the case rate had gone up into the thousands.

In the field of preventive medicine, however, a real and measurable advance has been made. We know from experience the influences hostile to the development of cholera and we have a scientifically based technique. Diagnosis of the disease has been made almost a matter of certainty and measures of sterilization which are safe and efficient have been devised.

These are advantages which the sanitary officers of the governments involved in this conflict now possess. They need every one of them. Their task is one of the most tremendous in all history. If war as conducted under the old conditions was favorable to the spread of the epidemic, modern war as exemplified in the present conflict is much more favorable. The fortifications of times which within a few months would have been called modern, but which now seem to us to be almost ancient, were great permanent structures built in time of peace, when full provision could be made for the physical agencies of sanitation. The fortifications of this war are trenches hastily dug, under conditions which render impossible the installation of those physical agencies, or their proper operation if even the crudest system of drainage could be installed. In former wars battles were frequently months apart, but in this war the battle may be said to be almost continuous, the opposing armies being constantly under fire. It must be realized how difficult is sanitation under these conditions. Where cholera obtains a foothold the soil will be polluted and water courses infected, and in the stress of battle thirsty soldiers will drink the water from polluted streams and wells. The conditions of burial in themselves are extremely

dangerous and particularly dangerous in cholera infected armies. The shallow trenches, the interment by wholesale, all these are full of grim suggestion. Add to all these conditions the rapid changes of position involved in the swaying back and forth of a line of battle hundreds of miles in length, and you will not have yet the full measure of the task of the sanitarians in the field. For behind these physical conditions looms a moral consideration of the greatest significance. Desperate beyond precedent this war is. Expedition in the work of destruction is the cardinal object of all the powers engaged. Modern war is so costly in life and treasure that exhaustion is the thing most to be dreaded. The belligerent who first finds his striking arm weakened must be at the mercy of his foes. Consequently all other considerations give place to the prime consideration of destruction. It is that which engages the thought and inspires the energy of each of the governments involved. Under these circumstances it is obvious that the conservation of life must play a secondary part. War is a complete reversal of the processes of civilization.

Our cholera visitations have always come to us with the European peoples numerically preponderant at the time in our immigration. In 1832 its appearance here was preceded by its outbreak in Ireland from which land at the time the immigration was heavy. The visitation of 1892 was from Hamburg, which had then become a great emigration port, being the point of embarkation for many immigrants from southern Europe and Russia. The visitation of 1911 was from Italy, the Italian immigration being very heavy in that year. Within the last few years there has been a steady increase in the percentage of immigrants coming from countries east of Italy. In the fiscal year ending September 30th last, this country received 165,705 immigrant natives of southeastern Europe.

The port of New York is the sanitary frontier of the United States. More than 70 per cent of all the immigration admitted annually is admitted at our ports. Consequently it is here that the main defenses against a threatened visitation must be erected and the time to erect them is now. They should be provided under conditions which do not disturb the judgment. The appearance of cholera ships in this port should not throw out of gear the machinery of the quarantine service. That machinery should be so contrived that a cholera visitation or any other visitation will fit into its regular functioning. All my thought since I assumed control of the quarantine department has been to shape its functional organization to that end. We have had some success in this direction I think. In 1911 it was necessary, in order that the bacteriological examination of all immigrants from infected ports might be conducted, to call upon outside health departments for additional bacteriologists and those bacteriologists when obtained for the most part had to be specially instructed on the scene in

cholera work. They were familiar with its theory but not with its practice. When these bacteriologists were obtained there were no proper accommodations for them at the quarantine station. Our laboratory was then a small wooden shed that had been a boat house, and the bacteriologists were compelled to do their delicate scientific work under conditions of congestion of the most discouraging character. Within the last year we have changed all this. We have completed and put into service a splendid bacteriological and pathological laboratory on the quarantine grounds, most modern in its construction and equipment and sufficiently capacious to give accommodation for any number of bacteriologists who may be needed in our work. The laboratory staff has been reorganized. After advertising in nearly all the medical journals in the country for a new director and passing upon many applications, the Advisory Board of the department, to whom I referred the selection of a candidate, recommended Dr. Oscar Teague who in 1911 was one of the two American delegates to the International Plague Congress at Mukden, Manchuria, and who for several years as a bacteriologist in the Bureau of Science, Manila, had actual experience with a cholera epidemic where the case rate rose to fifty per diem. Upon this recommendation I appointed Dr. Teague and under his direction a special corps of bacteriologists has been organized and given particular training in cholera work. Consequently, we are ready now at our laboratory to examine any number of cultures. This bacteriological examination is the most modern and effective safeguard that science has devised. It means the examination of specimens from all persons on ships from ports in which cholera is epidemic. By this examination the Health Officer is enabled to determine whom it is safe to admit and whom it is wise to detain. The cruelty and terror and useless waste of the old long-term detention of vessels and passengers is eliminated. Not only is the cholera patient detected but the cholera carrier, who is much more dangerous to our public health, is caught in the meshes of this examination. It is practically certain that the immigrants who are sieved through can safely be admitted to free communication with our people.

When a case of cholera is found on board a ship or when a bacteriological examination discloses the presence of the cholera carrier, the contacts will be taken to Hoffman Island for the period of incubation. All actual cases and all carriers will be detained in the Contagious Disease Hospitals at Swinburne Island. Daily bacteriological examinations will be made of all detainees and groups will be promptly discharged when the examination justifies it.

By the measures I have outlined I believe that any cholera visitation can be handled in this port with safety to the public health and with the slightest possible inconvenience to our maritime commerce.

# Medical Society of the State of New York

## ANNUAL REPORTS

1914

### REPORT OF THE PRESIDENT.

#### *To the House of Delegates:*

Permit me again to express to you my sincere appreciation of the great honor conferred upon me in electing me President of the Medical Society of the State of New York. I wish to thank the other officers and the committees for their excellent support during my administration.

While under the Constitution the power of the President of this Society is anything but plenary, yet, thereunder, sanctioned by long custom, his duties are to safeguard and to promote the constitutional purposes of the Society and to make such recommendations affecting them as in his judgment and experience will best accomplish this end.

The knowledge of the affairs of the Society acquired by the President during his term of office is of great value to the Society. At present this asset is lost by his complete retirement at a time when the work of the Society is at its height. Our best interests would be subserved and this experience secured by retaining the retiring President in an advisory capacity. This principle of using the experience gained in the Council of the Society is exemplified in the recently adopted amendment whereby the Councillors are so elected that at no time are all of them new to the work. I therefore recommend that Article V, of the Constitution be so amended that the retiring President shall become a member of the Council for one year.

#### FINANCES.

Notwithstanding the statement of the Secretary that the increase in membership during 1914, was the largest in the history of the Society, the Treasurer reports a deficit for the fiscal year ending December 31, 1914. As no extraordinary, unusual, or emergency cause for expenditure was created during the past fiscal year, this shortage is due to the normal disbursements in carrying out the financial policies endorsed by the last House of Delegates and, quite naturally, an annual deficit is bound to occur if like financial policies be continued.

In pursuance of one of the high purposes

of the Constitution which says: "To guard and to foster the material interests" of the members; and in appreciation of the necessity for changing the threatening trend of our finances, the three principal expenditures (approximately seventy-five per cent) of the Society—the Malpractice Defense, the Journal and the Directory—were carefully considered in the hope that a way might be found to prevent the occurrence of a greater deficit and also to reimburse the Treasury. As a result of this investigation it was found that the opinions contained in the report of my immediate predecessor, pretty generally expressed the views of the constituent bodies. But two courses seem open to accomplish these ends—one, to increase the annual assessment, and, two, to retrench in one or all of these principal expenditures.

In consideration of the expressed opinion of the members that each is unwilling to pay any more for what he is now receiving from his membership, and in recognition of the present national necessity for economy—an increase of the annual assessment at this time would be impracticable. Therefore, retrenchment is the only method which this Society can safely adopt.

The concensus of opinion of the rank and file of our organization is that the said "material interests" are fostered most by the Malpractice Defense, less by the Journal and least by the Directory, and, that the members would cheerfully submit to an increase in the annual assessment if due to betterment of the first two, or if due to other added material benefits; but that they would rebel against the increase if the cause is due in so great a measure to the Directory.

The report of Treasurer shows that for the fiscal year ending December 31, 1914, the Society paid out \$6,522.50 for Malpractice Defense—27 per cent of the income for the same period; \$5,763.13 for the Journal—24 per cent of the income, and \$6,380.76 for the Directory—26 per cent of the last annual income.

I believe the determination of the policy of this Society on the vital questions just considered should be decided by the vote of the

membership at large and that the whole question of our financial policies be submitted to them as a referendum as provided in Article VIII, of the Constitution of the Society. I, therefore, recommend that a referendum of the question—"Shall the Medical Society of the State of New York continue, diminish or discontinue its expenditures for Malpractice Defense, publication of the Journal, or publication of the Directory?"—be submitted to the members by the House of Delegates in conformity with the constitutional provisions just mentioned.

#### SCIENTIFIC WORK.

The wisdom of the reorganization of the Scientific Work in 1912, to harmonize with that of national and other state societies, has been amply demonstrated. Of the sections then instituted only three—Medicine, Surgery, and Eye, Ear, Nose and Throat—now exist. For some unfortunate reason the Section on Public Health and Preventive Medicine was permitted to pass into "innocuous desuetude." I believe this to have been an error; more particularly so since the revision of the Public Health Laws of the State of New York in 1913, established a Public Health Council with whom rests the duty of enacting a uniform sanitary code and of defining the proper qualifications for health officials throughout the state—now numbering upwards of 1,200—all of whom must be physicians. The present attitude of the Public Health Council is to require of appointees a certificate of having successfully completed a special course in a recognized school. A section on Public Health in our Society would become a clearing house for the critical consideration of all questions bearing upon state as well as preventive medicine; it would exercise a watch over the enthusiasm of public health officials, while at the same time ever earnestly supporting them in the performance of their simply executive duties. To these ends and to further the high purpose of our Society "to enlighten and direct public opinion in regard to the great problems of State Medicine"—I recommend the re-creation of a permanent section in the Scientific Work of this Society to be known as "Section on Public Health, Hygiene and Sanitation."

This year a Section on Syphilis was inaugurated to emphasize conspicuously the very great importance of this disease to humanity, to the profession and to the state; and to establish a precedent for the guidance of other associations in its consideration. The program indicates that so complete and so impressive will be this initial emphasis that hereafter the interest thus aroused can be well maintained by the other sections; or it may be that the end sought will best be secured by a recurrent introduction of this section as often as every third year. A

large part of the consideration of syphilis should come within the purview of the Section on Public Health, Hygiene and Sanitation, as next to the highest expenditure of state funds, which proper preventive medicine could greatly diminish, is for the maintenance in institutions of inmates suffering from the effects of syphilis. The other sections could profitably and should annually discuss some phase of this disease.

I recommend the adoption of the following:

In consideration of the ravages wrought by syphilis in the health of the community, and in recognition of the inadequacy of existing facilities for checking its dissemination, the Medical Society of the State of New York petitions the Department of Health of the State of New York:

(1) To order a system of confidential notification of all cases of syphilis for statistical purposes, from which the name of the afflicted shall be omitted.

(2) To arrange for the diagnosis and treatment by boards of health of all cases of syphilis for which no provision can be otherwise made.

In thus calling your attention to these especially mentioned phases of our scientific work it is far from my purpose to detract from the fulness and importance of the programs of the other sections, wherein are found equally important subjects presented by master-minds.

#### PUBLIC LECTURES.

Recognizing the baneful influence of the propagandism of the many sects and bigots upon the minds of the people affecting broad scientific medicine, and deeming it right and proper that the public should be taught the truth in regard to the discoveries of scientific medicine, and striving to fulfil that high purpose of this Society "to extend medical knowledge and advance medical science"—a very instructive course of illustrated lectures has been prepared for the public on much discussed medical questions of the day to be given by eminent authorities on the special subjects chosen. By thus putting the weight of its authority upon the right enlightenment of the people on questions involving preventive and state medicine, this Society will protect the public from the evils of ignorance, superstition and charlatanry, will prove the altruism of the profession and will create a better understanding by the people of the rational treatment of disease as practiced by our profession. I recommend that such a public educational course be made a permanent feature of the annual meetings of the Medical Society of the State of New York.

#### MEMBERSHIP.

We Americans are a people who think more easily in headlines than in statistics; we are a people who are easily impressed by mere numbers. The attitude of the public, of Congress,



of Legislatures, is swayed by big numbers more easily than by powerful argument backed by experience. This Society should therefore use all possible means to bring into its membership every reputable physician of the Empire State. This Society should ever keep in mind the fulfilment of that high purpose of the Constitution—"to federate and bring into one compact organization the medical profession of the State of New York."

A reasonably accurate enumeration shows nearly 15,000 registered practicing physicians in the State of New York, a very large percentage of whom is eligible to membership in our Society. The Secretary's report shows that nearly one-half of this number is still without the pale of the Medical Society of the State of New York. This proportion obtained at the last annual meeting and notwithstanding strenuous efforts during the past year to increase the membership in the several counties, the relation still exists. Too great a number of the profession is not deriving the benefits offered by our organization, nor is it fully aiding in the contest to maintain a high standard of medical education and practice, to protect and promote public health legislation and to combat the pernicious activities of practitioners of irregular medical cults.

Notwithstanding that the records for the fiscal year show the greatest increase of any year of the Society's existence, yet the membership at the close of 1914, eight years after the reorganization, is only twenty per cent greater than it was in 1906. The growth of the Society has but kept pace with the natural increase of the entire profession in the state; it is therefore practically stationary. An analysis of the causes of this stationary percentage relation between members and non-members shows several curious conditions, all of which can be grouped under two heads—Illiberality and Indifference.

The only place in our Constitution and By-Laws in which any mention is made of the qualifications necessary for membership, is Section 2 of Chapter X, which reads: "Full and ample opportunity shall be given to every reputable physician to become a member of the Society in the county in which he resides, and if there be no such society, then in the county society of an adjoining county." The entire question is left to the inconstancy of those in control of each constituent body; this has led to a variety of interpretations of the words "reputable physician." In some counties they have been so liberally interpreted as to admit any practitioner of medicine holding a full state license who is in good standing in the community and who conforms to the accepted code of medical ethics. In other counties, notwithstanding the sovereign power of the people has abolished all sectarian lines by granting a license signed by representatives of the homœpaths,

the eclectics and the osteopaths as well as the regular profession, much blocking of the admission of reputable physicians is constantly occurring. No doubt time and association will correct this illiberal attitude of many of our most useful and loyal members. Surely the just mentioned high purpose of this Society, let alone the American spirit of equality, is lost to sight if the accident of birth makes it impossible for a reputable physician to become a member of our Society as is occurring in some counties.

It is frequently disheartening to come across so much lack of enthusiasm on the part of the officers and members of the county societies. No doubt this indifference is due to the fact that the average physician is too busy. Only frequent contact with his fellow practitioners will tend to correct this; and it is only personal contact and the promulgation of the advantages one enjoys from his membership that will ever successfully secure the eligible non-member. I would suggest that some uniform plan be adopted whereby each member shall be constantly constrained to influence the non-members of his community to affiliate with the county society.

I would recommend that a committee of three be appointed to prepare a more exact and clear definition of what shall constitute eligibility to membership for the instruction and guidance of the county societies, and to outline some feasible plan for more rapidly increasing our membership.

#### LEGISLATION.

During the past year the onslaughts of the antis and the irregular practitioners upon the legal defenses of the health and physical welfare of the people, now on the statute books of the state, have been as many if not more than in the past, but with this difference—they have been pushed with greater vigor and they fell just short of victory—all of which has encouraged a redoubling of efforts to make a breach in the barriers.

A communication was early posted to the officers of the county societies which contained a carefully prepared statement of the dangerous pass to which these attacks had come and which made an earnest appeal for prompt and vigorous action. The very indifferent results that followed prove conclusively that something is radically wrong with the methods pursued in regard to legislative matters by both the state and county societies. It was indubitably shown that many of the county standing Committees on Legislation were simply standing soundly asleep, or else had eased their consciences of responsibility by passing the contest up to the State Committee.

If this Society is efficiently to carry out that high purpose mentioned in the Constitution "to secure the enactment and enforcement of just

medical laws," a radical change must be made in the present methods of securing and influencing legislation. Of the individual followers of the various sects that constantly seek to make a breach in, if not to tear down the legal walls protecting the health of all the people—each assumes responsibility for the movement with an enthusiasm worthy a better cause. These forces have a highly efficient organization; every unit eagerly enters the contest provided with argument, fact and example; each has an intimate acquaintance with diplomatic strategy and political tactics that make for the success of their revolutionary movement. In contrast, the indifference of the rank and file of our profession, yes, even of the officers of the State and County Societies—to the desires of the opposition and even to the defense of the law they are supposed to protect, is prodigious, and one is almost overwhelmed at their evident weakness in battling such foes. At the same time one is filled with wonder at the repeated failure of the revolutionists. It is borne in upon one that the frequent avoidance of defeat is due to the enthusiastic efficiency of the capable Chairman of the State Committee on Legislation.

A survey of the history of medical legislation compels the belief that the legal protection of the health and welfare of the people will never be free from attack so long as there is an annual change of political complexion in the state legislature. This means that the State Society in its self-assumed office of guardian of public health must ever be on the alert with a continuous, consistent and altruistic policy of preparedness and not as now with a hurried, haphazard, emergency defense.

To this end I would suggest: One, the creation of a State Council on Legislation which shall act in an advisory capacity to the State Committee on Legislation and which shall consist of the Chairman of the State Committee on Legislation as presiding officer, and the Chairman of each of the County Committees on Legislation; and two, the employment of a highly capable man, not necessarily a physician, to be known and to act, as Secretary to the State Committee and the State Council on Legislation. The functions of this Secretary to be threefold—(a) carefully to prepare clear and concise digests of proposed medical legislation for distribution to the entire membership for their enlightenment; (b) to attend the sittings of the legislature in order to keep the State Committee on Legislation informed of all medical legislation and authoritatively to inform legislators in regard to all medical questions coming before the legislature, and (c) to encourage the membership, in conjunction with the local Committees on Legislation, to meet and discuss with their local representatives in the legislature, all questions of medical legislation.

I therefore recommend that a committee of

five be appointed to consider the above suggestions, the recommendations hereon by the Secretary and such other suggestions as have been made or may be made, and to report therefrom a comprehensive plan for consistent attitude and approach on all medical legislation.

#### PUBLIC HEALTH.

By securing the enactment of favorable laws enlarging the duties of departments of public health and granting them autocratic powers without checks of any kind, the profession is aiding in the gradual up-building of a powerful centralized organization. However capable the physician at the head, these laws place inherent human weakness at the mercy of all kinds of destructive pressure by all kinds of ignorance that for the time being have popular support. This was clearly exemplified by the subservient attitude taken in January, 1915, toward proposed changes in the compulsory vaccination laws by our undeniably efficient and foresighted Commissioner of Health of the State of New York.

I am heartily in accord with the unanimous sentiment among thinking physicians, the result of hard bought experience, which says that "the individual cannot be accepted as the arbiter of his own health and that some outside authority must be called in with power to act"; I thoroughly agree with those who believe that this power should reside in the state—the concrete representative of the people, for the people and by the people. Just as there are compulsory education, school and factory inspection and medical education laws so must powers be given the state to compel the exact observance by the individual of proven laws governing sanitation, hygiene and health. But the residence of these autocratic powers in the office of one man uncontrolled by any other force than his own whim is a menace; his attitude on any question is ever subject to the wind of popular excitement and may be swayed not by the idea of the present or future welfare of the people, but rather by the expediency of the moment. It seems to me that some method must be devised whereby this unwholesome trend may be checked.

In consideration of the necessity for centralized autocratic power and of the danger attending the necessary residence of such power in one individual, this Society in conjunction with the other legally recognized state medical societies should act as a watch dog over the official acts of such a dictator to protect him in right action and to condemn and to prevent wrong action on his part.

To this end I recommend that the duties of the Committee on Public Health be so enlarged that it shall act in the capacity here suggested, and that it shall seek and arrange for co-operation from the other legally recognized state medical societies in the consideration of the acts

of the Commissioner of Health of the State of New York.

#### WORKMEN'S COMPENSATION.

Realizing the monetary value to industry of human life and health the state, after many years of agitation and investigation enacted labor laws in 1910 and later, to govern conditions in the industrial world in an effort to conserve the health, improve the sanitation and promote the general welfare of the laboring classes. One of these salutary laws, the Workmen's Compensation Act, became operative July 1, 1914. Notwithstanding the publicity given it, the medical profession generally was totally unprepared for the revolutionary effects of its enactment.

The relation of the profession to the application of this compensation law is extremely close for every case of disability coming under its provision must of necessity have the care of some physician. From the doctor's viewpoint the questions of remuneration under the law by the commission and of the fee schedules for service rendered as offered by the liability companies, have been great bones of contention in the several counties. The real objection is that the fee-bill is inelastic, that in spite of the publication of minimum and maximum fees, the minimum really becomes the maximum. A fair interpretation of the law implies that the amount paid for the service rendered should be comparable to the income of the injured person; that the doctor should charge no more than if the patient himself paid the bill instead of the employer, the insurance company or the state; and that it is not intended that the law shall represent a contract of flat fees for everybody alike.

It was found that the members of the Society were being induced to contract with the liability companies on the basis of a flat rate fee-bill with a very low minimum. In conformity with one of its high purposes, to wit—"to protect them (the members) from imposition," the Society took up the matter of a fee-bill with the representatives of the liability insurance companies. The result was reported in the Journal for the month of August, 1914, by the special committee designated to investigate and to arrange a fee-bill. To the carefully prepared report of this committee your thoughtful consideration is directed. To its recommendation your approval should be given.

Considering the vast importance of this and like economic questions; noting the present inertia of the membership and its unjust criticism of those who have failed to stem the tide, it is imperative that some other way of handling such questions should be adopted than by cursory consideration and hasty action of committees appointed in an emergency. I therefore recommend that a standing committee consisting of five (5) members be created, to be known as

the Committee on Economics that shall be on the watch for the appearance of any movement affecting the economic life of the membership, that shall at once begin an investigation when such a movement is discovered and that shall report its findings and make recommendations at least annually to the House of Delegates.

#### THE CONSTITUTIONAL CONVENTION OF THE STATE OF NEW YORK.

At the last annual meeting, the House of Delegates ordered the appointment of a committee whose duty should be to attend the convention for the revision of the Constitution of the State of New York and thereat to proffer advice and suggestions upon all such matters of public health and medical practice as might come before the convention. As nearly all of the nine members serving on this committee are past presidents of the Society assurance is given that not only will the welfare of the public and the state be carefully guarded, but also the interests of the medical profession.

The present constitution of the state contains no direct provision governing public health or medical practice. The Legislature regulates all such matters under the general "police power" granted it by the constitution; the laws bearing on public health and medical practice now found upon the statute books of the State of New York have been so enacted. In 1909, they were codified under the title "Public Health Act."

The framers of the present State Constitution wisely omitted any clauses specifically regulating state medicine because alterations in laws controlling public health are demanded from time to time as knowledge and experience ripen. One serious danger possible at this convention is that zealous regulars and fanatic irregulars will endeavor to have written into the fundamental law of the state, provisions governing medical matters that will render them almost as unchangeable as adamant and that in the long run will work mischief to the best interests of the state, the individual and the profession.

It is my personal opinion that regulation of public health and medical practice should be left to the police powers of the Legislature so that all those laws grouped under the "Public Health Law" may have a mobility impossible under constitutional provision. I am quite sure the interests of all are safe in the hands of such a representative committee as that appointed by the Medical Society of the State of New York.

#### EDUCATION.

Another high purpose of this Society is distinctly enjoined in the words of the constitution—"To elevate the standard of Medical Education." Continuous effort is being made by irregular medical cults with specious and misleading titles, to obtain the sacred privilege of ministering to the sick; to secure it not by the

arduous time-consuming methods demanded by the state and accepted by the regular profession, but by some special legislative enactment that will so lower the necessary requirements as to make easy the coveted preferment.

All true physicians recognize the inherent human obstacles to advancement in a vocation in which art and science are so intimately associated. In the battle against disease they have ever combatted with the simple truths of science, the influence of ignorance and superstition. Admitting the force of all this moral influence, nevertheless, it has been found necessary from time to time to secure the enactment of laws compelling the observance of proven truths. Heretofore, the State of New York, listening to the arguments of this Society, has stood at the forefront in medical education. Today a physician legally practicing in one state or territory finds a bar against following his chosen profession in another state or territory, although the field of endeavor and the equipment necessary to work therein are practically alike throughout the nation. This anomalous condition is a great wrong on the people and an injustice to the physician. Another great wrong and injustice is the possibility that a physician legally disqualified in one state may qualify without difficulty in another. All this is due to the heterogenous requirements of the separate bodies politic of the United States. While the practice of reciprocity mitigates this condition to some extent, a license to practice medicine should be nation-wide in its grant. To accomplish this such a license must be issued by federal and not by state authority. Such a consummation would put the license to practice medicine on a level with the commissions of officers of the army and navy, and the portfolios of the consular service.

Due to this same heterogeneity of medical education and licensure, many physicians are today practicing medicine whose intellectual equipment and mental calibre are far below the standards demanded of those just entering the profession by the more advanced states. This lack of mental and educational qualifications is in no wise offset by experience. Too frequently criminal and unethical tendencies control the acts of such incompletely equipped physicians. This drag on the maintenance of high professional standards is of great advantage to the before-mentioned irregular practitioner in his effort to lower the legal bars; it excites suspicion of the singleness of our purpose in opposing any lowering of the bars, and it creates a lack of confidence in our altruistic claims on the part of those most interested—the people. Here again, moral influence has failed to accomplish the desired result and the law must be invoked.

At the American Medical Association Council meeting last February, a paper was presented endorsing the re-examination every five years

of all physicians in practice. Re-examination would eliminate fossilization and promote advancement in the profession; it would check the aspirations and conduct of irregular practitioners; on the part of the people, it would inspire loyalty and confidence, and renew their interest. The sole object of re-examination is to prove fitness to practice; it parallels the annual physical tests of officers of the United States Army and Navy. Such re-examinations necessarily must be practical and not theoretical. Further increase in the requirements demanded of those preparing to enter the profession is likely to work much harm as it would surely debar many otherwise able men. The entrance conditions have today nearly reached the limit of endurance for the vocation; in no other profession is the aspirant so severely taxed in time, mind and money. Re-examination would quickly eliminate any undesirable practitioners while not putting prohibitive restrictions upon ability.

The trend of re-examination would be to bring the recognition of disease, that is diagnosis, to the front as the most important professional attainment, and to relegate to the background the cure of disease, that is therapy, upon which the irregulars place so much stress and upon which their vicious hold on the public entirely depends; once made compulsory, re-examination would cause the eventual extinction of quackery and charlatanry.

Since the recommendation by one of my predecessors that a fifth year be added to undergraduate requirements, to be spent in hospital work, nothing has been done by the Society to secure this end. However, among the medical schools opposition to this meritorious recommendation has developed; not because it contains anything inimicable to the best interests of the student or to the welfare of the public, but rather from purely selfish motives. The colleges, not having direct control of a sufficient number of hospitals for this purpose, are unwilling to seek co-operation from other hospitals. Unquestionably the people are entitled to have those who have had every advantage in preparing for this very important duty to minister to their ails and to protect their health. A year of active hospital experience under capable teachers is unquestionably a marked advantage for the would-be physician and a valuable safeguard for the public.

These questions are important and imperative; therefore, I would suggest that they be referred to the Committee on Medical Research for consideration.

In the report of the Committee on Midwives the better education of midwives is forcibly presented and the continuance of the investigations of the Committee on Midwives recommended; this should meet with your approval.

In the report of the Committee on Public

Health among many other important matters, attention is called to the necessity for aiding the Department of Health of the State of New York in educating and training would-be public health officers. The committee makes no specific recommendation in the premises; I therefore suggest that this question also be referred to the Committee on Medical Research for consideration.

It seems to me that the functions of standing committees should always be broad. A review of the functions of the Committee on Medical Research—a standing committee—shows a limitation altogether too small and narrow. To correct this, to enlarge its scope and to give it the range which its importance demands, I recommend that the By-Laws be so amended that the Committee on Medical Research shall hereafter be known as the Committee on Medical Education whose functions shall be described in Chapter VII, which shall read—The Committee on Medical Education shall consist of the Chairman and one member for each two hundred 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 medical and scientific education and experimentation; it shall after investigation suggest changes in methods of medical teaching, including undergraduate and licensing requirements, and it shall use all honorable means to oppose such bills as may be presented to the Legislature with a view of limiting or restricting scientific medical teaching and progress. In legislative work it shall act in co-operation with the Committee on Legislation.

Naturally, to the consideration of such a Committee on Education would be referred all questions bearing on medical education. By aid of special subcommittees it would investigate the advisability of establishing a fifth year of undergraduate work in hospitals; it would study the advantages to accrue from, and the methods to carry out the periodical re-examination of licentiates in medicine; it would examine into the advisability of the federal government granting license to practice medicine; it would as quoted from the report of the Committee on Midwives, properly represent—"The Medical Society of the State of New York in the activities connected with the practice of midwives"; it would in the words of the report of the Committee on Public Health when speaking of the State Department of Health "further the proposal of the department to find ways and means to give special education and training to public health officers."

GROVER W. WENDE,  
*President.*

March 25, 1915.

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, 1914:

|   |       |       |
|---|-------|-------|
| Membership, December 31, 1913.....                        | 7,077 |       |
| New Members, 1914.....                                    | 620   |       |
| Reinstated Members, 1914.....                             | 220   |       |
|   | <hr/> | 7,917 |
| Deaths .....  | 77    |       |
| Resignations .....  | 51    |       |
| Expelled .....  | 1     |       |
|   | <hr/> | 129   |
|   |       | <hr/> |
|   |       | 7,788 |
| Dropped for non-payment of dues, December 31, 1914 .....  |       | 339   |
|   |       | <hr/> |
|   |       | 7,449 |
| Elected after October 1, 1914, and credited to 1915 ..... |       | 172   |
|   |       | <hr/> |
| Membership, January 1, 1915.....                          | 7,621 |       |
| Membership, January 1, 1914.....                          | 7,239 |       |
| Membership, January 1, 1913.....                          | 6,964 |       |
| Membership, January 1, 1912.....                          | 6,865 |       |

The increase in membership of 382 in 1914 is larger than in any previous year, and the prospects for 1915 are most encouraging. The total number of physicians in the state was 14,114 on October 1, 1914. The State Society on January 1, 1915, had 7,621 members, which shows that more than half the profession, or more than a majority, belong to the Society. There remains, however, a very large number of most desirable men who are not affiliated with their County Society, and every effort should be made to bring them into fellowship. The growth of the Society from January 1, 1911, to January 1, 1915, was 940. The profession in the state increased in the same time by 473. For the previous four years the new members were less than the admissions to the profession. The total number of graduates for the year ending June 1, 1914, for the entire United States was 3,594, as compared with 5,747 in 1904, which accounts for the small increase in the profession in the last few years. Renewed and continued efforts are necessary in every county to increase the membership, but great care must be exercised to see that no undesirable men are admitted. The argument that such men can be better controlled when members than when non-members does not always work out well in practice, as such men may prove a disturbing element in an otherwise harmonious organization. The time is not far distant when the majority of the profession as represented by the County and State Societies must take steps to control the conduct of non-members as well as of members. At the present time discipline can only be administered to a member. Non-members can violate ethics and decency, but cannot even be tried or censured for their acts, no matter how much discredit they may bring on

the profession. To make a thorough housecleaning some control over those who do not join, or who have resigned from their County Societies, is necessary. This is an important and delicate question, but one that should be given serious thought, because the public does not discriminate between members of the State Society and non-members, but considers all physicians as part of the profession. It holds all responsible for the actions of the few unworthy ones and many of these have so far escaped censure because they were non-members.

In the legal profession, the Bar Association, which corresponds with our State Society, investigates complaints against non-members and if they are found guilty, refers them to the Appellate Division for punishment. If the State Society were to undertake the investigation of non-members when a proper complaint is made, it might refer all questions of discipline to the State Board of Regents, who by law have the right to suspend or revoke the license to practice for various offenses.

The honor list of County Societies, whose membership for 1914 is fully paid up, is as follows: Bronx, Broome, Clinton, Essex, Monroe, Oneida, Otsego, Rockland, Saratoga, Sullivan, Tioga, Wyoming and Yates.

During the past year the collection of portraits of ex-presidents was increased by that of Dr. J. S. Sprague, 1853.

The Medical Society of the State of Pennsylvania has appointed a sub-committee on cancer, and this committee, which is a part of the Committee on Health and Public Instruction, has asked that the State Society urge upon the County Societies the desirability of having one monthly meeting in the year devoted to this subject, and that the JOURNAL also devote a certain amount of space to it in the July issue.

As the District Branch meetings represent all the counties combined, it might be desirable to have a paper on cancer control and prevention at each one of these meetings in the fall. Speakers could more easily be found to address eight meetings than to address fifty-nine County Societies, as in many instances there are no local speakers who are sufficiently well acquainted with the subject to properly present it, but the state organization could secure speakers for the District Branch meetings from the American Society for the Control of Cancer if it meets with the approval of the House of Delegates.

The list of officers and members this year as published in the directory contains the first addition to honorary members made since 1905, and the first retired members since this class was instituted by the amendment to the by-laws in 1914. This last list will enable the Society to keep many of the older members who have resigned of late years because there was no such list.

The clerical work of the office has greatly increased during the past year. This is largely

due to the fact that the Committee on Legislation sent out over 10,000 letters, and hundreds of telephone messages and telegrams have been sent and received.

The clerical force during January, February and March devotes the greater part of its time to the work of the Committee on Legislation. If the annual meeting had not been changed from January to April, it would have been impossible to do the work with the present force. Never have there been so many attempts to break down the medical laws, both in regard to the practice of medicine, anti-vivisection and anti-vaccination, etc., as during the past year.

It would seem, under these circumstances, desirable to increase the Committee on Legislation so that it would have more representatives throughout the state. The District Branch presidents, the councilors, might be added as actual members of the committee, as is done with the section chairmen in the Committee on Scientific Work. The County Society Committees on Legislation could be placed in charge of the District Branch presidents and this enlarged body should be organized for effective work. This plan is simple, will not materially add to the expense of the Committee on Legislation, and could be made of great value if, the District Branch presidents will heartily co-operate and see that the work in the County Societies is properly done. The plan can be put into execution at once by a resolution of the House of Delegates requesting that it be carried out and an amendment made to the by-laws, which can be acted upon by the House of Delegates at the annual meeting of 1916.

The Secretary would again urge upon the Society the desirability of trying to induce the American Medical Association to pay the railroad fares of its delegates to the annual meeting of the House of Delegates. It would seem to be a matter of common justice.

The work of the County Society officers shows a distinct improvement each year. The records are more accurately kept, correspondence more promptly answered and the plan adopted in most counties of keeping the Secretary and Treasurer in office for a number of years has shown good results.

The scientific work of the District Branches and County Societies was fully carried out during the past year and if the members will read the reports of the County Societies as printed in the JOURNAL each month they will be impressed with the importance and value of the work done.

The attendance at the District Branch meetings is not as large as it should be but it is hoped that with the new plan of keeping the Councilors in office for two years, that greater enthusiasm will prevail in the future, and that the meetings will be more largely attended.

The registrations at the State Society Meeting in 1913 in Rochester were 971. In New

York in 1914, 1,055. The Section registrations were as follows in New York in 1914:

Medicine, 174; Obstetrics and Gynecology, 119; Eye, Ear, Nose and Throat, 176; Pediatrics, 170; Surgery, no record kept.

It is hoped in the future that there will be a greater registration and interest in each Section, especially as the Sections elect their own officers, and the Chairmen are members of the Committee on Scientific Work, and are thus elected by a very small proportion of those who attend the meeting. The general registration for the New York meeting in 1914 of 1,055 represents about 13 per cent. of the entire membership at that date, whereas the meeting in Albany in 1912, the first year of the Sections, was but 10 per cent. of the total membership, and the last meeting before the division into the Sections the attendance was only 5 per cent. of the total membership. These attendance figures for the past two years are most encouraging although they are lower than the attendance at annual meetings in many other States, but conditions are so different in New York from those in other States that comparisons cannot properly be made.

During the past year delegate's certificates were given to the following: British Medical Association, Thomas F. Reilly, New York; Medical Society of New Jersey, William M. Leszynsky, and the Vermont Medical Society, Louis Faugères Bishop.

Respectfully submitted,  
WISNER R. TOWNSEND,  
*Secretary.*

December 31, 1914.

**REPORT OF THE TREASURER.**

*To the House of Delegates:*

The Treasurer desires to draw the attention of the Society to some further explanations of the financial condition of the treasury than is contained in the mere figures of each succeeding annual report.

Taking first the total amount of funds in possession of the Society at the end of each year, which, in this Society is represented at present by the bank balance, we have the following:

TABLE I.

| Bank Balances<br>Dec. 31st. | Excess of Income  | Deficit           |
|-----------------------------|-------------------|-------------------|
| 1906.....\$5,328.19         | \$3,234.29        | .....             |
| 1907..... 4,788.88          | .....             | \$1,287.37        |
| 1908..... 5,300.30          | 642.46            | .....             |
| 1909..... 9,426.79          | 3,311.63          | .....             |
| 1910.....10,096.73          | .....             | 479.22            |
| 1911.....10,608.33          | 850.85            | .....             |
| 1912..... 8,617.78          | .....             | 1,306.09          |
| 1913..... 9,448.08          | 879.40            | .....             |
| 1914..... 9,939.60          | .....             | 759.15            |
|                             | <u>\$8,918.63</u> | <u>\$3,831.83</u> |

Excess of income for the last nine years,  
\$5,086.80.

Excess of income for the last two years, \$120.25.

The loss shown for 1914, \$759.15, is nearly all due to the large amount of doubtful debts charged off in 1914, \$863.22, as against \$170.42 in 1913, an increase of \$692.80. Of this amount \$153.75 has already been paid before March 31st, 1915, and more will undoubtedly be paid during the year.

In making out the income and expenditure account the doubtful debts charged off are charged to the expense of the JOURNAL as these were for advertisements carried and not paid, and the expenses of the JOURNAL for the year were that much greater than if no bad debts had been charged off. The custom has always been to charge off doubtful debts at the end of each year, and the amount of accounts receivable carried over in 1913, of \$897.38 was much larger than the amount carried over in 1914, \$245.70. Of course each year in carrying over bills receivable only accounts that are supposed to be good are so carried.

As shown by the minutes of the Council Meeting, December 5th, 1914, the Committee on Publication has already made arrangements to reduce the expenses of the JOURNAL and Directory for 1915. The cost of the Directory will be about \$1,000 less than last year, and the JOURNAL about \$1,500 less, despite an increase of the JOURNAL of 500 copies a month for 1915. The JOURNAL, January 1, 1914, to March 31, 1914, cost.....\$2,663.02  
January 1, 1915, to March 31, 1915,  
cost ..... 2,174.50

|  |               |
|--|---------------|
| A saving in publication expenses for the first three months of 1915 over those of 1914 of..... | \$488.52      |
| JOURNAL receipts for same period were in 1915.....   | \$1,439.06    |
| JOURNAL receipts for same period were in 1914.....   | 1,158.93      |
| Decrease in cost of JOURNAL.....   | <u>280.13</u> |

Total saving..... \$768.65

The increase in revenue from dues of 1915 is estimated at \$1,000, and as the membership on April 1, 1915, was 7,868, as against 7,564 at same date in 1914, there is no question but what the dues will be increased by \$1,000 or more. The only large known increase of expenditures of 1915 will be the payment of the travelling expenses of the Delegates to the meeting of the American Medical Association at San Francisco, which will amount to about \$1,500.

The increase in revenue from dues and the decrease of the cost of the JOURNAL and Directory, unless some unusual expense should occur, will provide for a satisfactory surplus at the end of the year.

Respectfully submitted,  
ALEXANDER LAMBERT,  
*Treasurer.*  
April 10, 1915.

REPORT OF THE TREASURER.

ALEXANDER LAMBERT, *Treasurer*, In Account with THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

| DR   | CR.                            |
|--|--------------------------------|
| <b>CASH RECEIPTS, YEAR ENDING DECEMBER 31, 1914.</b> |                                |
| To Balance .....                                     | \$9,448.08                     |
| " Directory, 1912 .....                              | \$ 5.00                        |
| " Directory, 1913 .....                              | 477.50                         |
| " Directory, 1914 .....                              | 2,183.67                       |
| " Clerical Work .....                                | 91.38                          |
| " Interest on Deposits .....                         | 384.32                         |
| " Interest on Bonds .....                            | 90.00                          |
| " Sundry Receipts .....                              | 117.93                         |
| " Committee on Medical Research .....                | 761.74                         |
| " Advertising .....                                  | 4,674.64                       |
| " Subscriptions and Sales .....                      | 298.08                         |
| " Annual Meeting .....                               | 676.26                         |
| " Annual Dues and Arrears .....                      | 138.00                         |
| " Annual Dues, 1912 .....                            | 57.00                          |
| " Annual Dues, 1913 .....                            | 843.00                         |
| " Annual Dues, 1914 .....                            | 21,888.00                      |
| " Annual Dues, 1915 .....                            | 489.00                         |
|  | 33,175.52                      |
|  | \$42,623.60                    |
| <b>CASH PAYMENTS, YEAR ENDING DECEMBER 31, 1914.</b> |                                |
| By Annual Dues Overpayments .....                    | \$27.00                        |
| Traveling Expenses .....                             | \$424.23                       |
| Delegates A. M. A. Meeting .....                     | 67.80                          |
| Accountant .....                                     | 492.03                         |
| Carfare .....  | 200.00                         |
| Express .....  | 33.26                          |
| Treasurer's Bond .....                               | 23.34                          |
| Exchange on Checks .....                             | 12.50                          |
| Sundry Petty Cash Disbursements .....                | 12.27                          |
| Telephone .....                                      | 340.57                         |
| Stationery and Printing .....                        | 156.99                         |
| Postage .....  | 320.83                         |
| Rent .....   | 474.94                         |
| Insurance .....                                      | 900.00                         |
| Committee on Legislation .....                       | 5.70                           |
| Legal Expense .....                                  | 394.66                         |
| 1913 Directory .....                                 | 6,522.50                       |
| 1914 Directory .....                                 | 67.77                          |
| JOURNAL Expense .....                                | 8,644.03                       |
| JOURNAL Salaries .....                               | 231.85                         |
| JOURNAL Commissions .....                            | 1,275.97                       |
| JOURNAL Publication .....                            | 861.65                         |
| District Branches .....                              | 7,783.29                       |
| Clerical Work .....                                  | 295.11                         |
| Salaries .....                                       | 20.00                          |
| Annual Meeting .....                                 | 1,896.80                       |
| Secretary .....                                      | 891.54                         |
| Interest on Bonds Deposited .....                    | 500.00                         |
| Committee on Medical Research .....                  | 90.00                          |
|  | 209.40                         |
|  | \$32,684.00                    |
|  | Balance in Guaranty Trust Co.: |
|  | General Account .....          |
|  | Com. on Medical Research..     |
|  | \$9,387.26                     |
|  | 552.34                         |
|  | 9,939.60                       |
|  | \$42,623.60                    |

| ANNUAL DUES, 1914. |             |
|--------------------|-------------|
| County.            | Amt. Paid.  |
| Albany .....       | \$468.00    |
| Allegany .....     | 108.00      |
| Bronx .....        | 597.00      |
| Broome .....       | 252.00      |
| Cattaraugus .....  | 111.00      |
| Cayuga .....       | 207.00      |
| Chautauqua .....   | 264.00      |
| Chemung .....      | 165.00      |
| Chenango .....     | 108.00      |
| Clinton .....      | 153.00      |
| Columbia .....     | 96.00       |
| Cortland .....     | 90.00       |
| Delaware .....     | 87.00       |
| Dutchess .....     | 300.00      |
| Erie .....         | 1,758.00    |
| Essex .....        | 51.00       |
| Franklin .....     | 138.00      |
| Fulton .....       | 75.00       |
| Genesee .....      | 96.00       |
| Greene .....       | 78.00       |
| Herkimer .....     | 165.00      |
| Jefferson .....    | 180.00      |
| Kings .....        | 2,280.00    |
| Lewis .....        | 48.00       |
| Livingston .....   | 105.00      |
| Madison .....      | 93.00       |
| Monroe .....       | 849.00      |
| Montgomery .....   | 159.00      |
| New York .....     | 7,281.00    |
| Niagara .....      | 207.00      |
| Oneida .....       | 489.00      |
|                    | \$22,281.00 |

| ADVANCE DUES, 1915.                  |            |                     |            |
|--------------------------------------|------------|---------------------|------------|
| County.                              | Amt. Paid. | County.             | Amt. Paid. |
| Albany .....                         | \$33.00    | Oswego .....        | \$6.00     |
| Bronx .....                          | 42.00      | Otsego .....        | 3.00       |
| Broome .....                         | 6.00       | Orleans .....       | 3.00       |
| Chautauqua .....                     | 9.00       | Queens-Nassau ..... | 15.00      |
| Chenango .....                       | 48.00      | Seneca .....        | 6.00       |
| Erie .....                           | 162.00     | Steuben .....       | 12.00      |
| Essex .....                          | 3.00       | Tompkins .....      | 3.00       |
| Herkimer .....                       | 6.00       | Ulster .....        | 6.00       |
| Kings .....                          | 30.00      | Washington .....    | 3.00       |
| Livingston .....                     | 12.00      | Wayne .....         | 18.00      |
| Monroe .....                         | 9.00       | Westchester .....   | 21.00      |
| Niagara .....                        | 6.00       | Wyoming .....       | 3.00       |
| Onondaga .....                       | 12.00      |                     |            |
| Ontario .....                        | 12.00      |                     | \$489.00   |
| DIRECTORY ACCOUNT, 1914.             |            |                     |            |
| <i>Expenditures.</i>                 |            |                     |            |
| Postage .....                        | \$320.40   |                     |            |
| Stationery and Printing .....        | 163.40     |                     |            |
| Delivery .....                       | 736.50     |                     |            |
| County Clerk's Fees .....            | 9.00       |                     |            |
| Salaries .....                       | \$1,658.15 |                     |            |
| Commission .....                     | 305.42     |                     |            |
|                                      | 1,963.57   |                     |            |
| Printing and Binding Directory ..... | 5,751.56   |                     |            |
|                                      | 8,944.43   |                     |            |
| <i>Income.</i>                       |            |                     |            |
| Advertisements .....                 | \$1,560.67 |                     |            |
| Sales .....                          | 1,003.00   |                     |            |
|                                      | 2,563.67   |                     |            |
| Cost of Directory .....              |            |                     | \$6,380.76 |



REPORT OF THE TREASURER.

JOURNAL ACCOUNT, YEAR ENDING DECEMBER 31, 1914.

| <i>Income.</i>                 |                    | <i>Expenditures.</i>             |                    |
|--------------------------------|--------------------|----------------------------------|--------------------|
| Advertisements .....           | \$5,395.44         | Publication .....                | \$7,758.29         |
| Subscriptions and Sales .....  | 298.08             | Expense .....                    | 230.85             |
| Doubtful Debts Collected ..... | 40.00              | Salaries .....                   | \$1,275.97         |
|                                | <u>\$5,733.52</u>  | Commission .....                 | 1,233.71           |
| Cost of JOURNAL .....          | \$5,763.13         |                                  | 2,509.68           |
|                                | <u>\$11,496.65</u> | Discount .....                   | 134.61             |
|                                |                    | Doubtful Debts Charged Off ..... | 863.22             |
|                                |                    |                                  | <u>\$11,496.65</u> |

BALANCE SHEET, DECEMBER 31, 1914.

| <i>Assets.</i>                 |                    | <i>Liabilities.</i>             |                    |
|--------------------------------|--------------------|---------------------------------|--------------------|
| Cash, Bank .....               | \$9,939.60         | Annual Dues, 1915 .....         | \$489.00           |
| Petty .....                    | 1.70               | Committee on Medical Research.. | 552.34             |
|                                | <u>\$9,941.30</u>  | Accounts Payable .....          | 30.75              |
| Accounts Receivable .....      | 245.70             | Lucien Howe Prize Fund          | \$1,915.76         |
| Furniture and Fixtures .....   | \$274.00           | Merritt H. Cash Prize           |                    |
| Directory Catalogue .....      | 250.00             | Fund .....                      | 939.46             |
|                                | <u>524.00</u>      |                                 | 2,855.22           |
| Directory, 1914 .....          | 400.00             | Surplus Jan. 1, 1914....        | \$10,798.06        |
| Union Dime Savings Institution |                    | Loss, 1914 .....                | 759.15             |
| Lucien Howe Prize Fund.....    | \$415.76           | Surplus Dec. 31, 1914....       | 10,038.91          |
| Union Dime Savings Institution |                    |                                 |                    |
| Merritt H. Cash Prize Fund.... | 439.46             |                                 |                    |
| Title G. & T. Mtg. Cdfs. ....  | 2,000.00           |                                 |                    |
|                                | <u>2,855.22</u>    |                                 |                    |
|                                | <u>\$13,966.22</u> |                                 | <u>\$13,966.22</u> |

I hereby certify that the above Balance Sheet is correct as shown by the books.

A. H. Wicks,  
Certified Public Accountant,  
302 Broadway, New York.

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1914.

| <i>Income.</i>               |                    | <i>Expenditures.</i>           |                    |
|------------------------------|--------------------|--------------------------------|--------------------|
| Arrears of Dues .....        | \$1,038.00         | Expense .....                  | \$1,033.23         |
| Dues, 1914 .....             | 22,254.00          | Telephone .....                | 153.54             |
| Interest on Deposits .....   | 384.32             | Stationery and Printing .....  | 320.83             |
| Clerical Work .....          | 71.38              | Postage .....                  | 154.54             |
| Directory, 1912 .....        | 5.00               | Rent .....                     | 900.00             |
| Directory, 1913 .....        | 19.73              | Insurance .....                | 5.70               |
|                              | <u>\$23,772.43</u> | Salaries .....                 | 1,896.80           |
| Excess of Expenditures ..... | 759.15             | Committee on Legislation ..... | 390.16             |
|                              |                    | Legal Expense .....            | 6,522.50           |
|                              |                    | Annual Meeting .....           | 215.28             |
|                              |                    | District Branches .....        | 295.11             |
|                              |                    | 1914 Directory .....           | 6,380.76           |
|                              |                    | Secretary .....                | 500.00             |
|                              |                    | JOURNAL Cost .....             | 5,763.13           |
|                              | <u>\$24,531.58</u> |                                | <u>\$24,531.58</u> |

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1913.

| <i>Income.</i>             |                    | <i>Expenditures.</i>            |                    |
|----------------------------|--------------------|---------------------------------|--------------------|
| Arrears of Dues .....      | \$1,011.00         | Expense .....                   | \$1,354.50         |
| Dues, 1913 .....           | 21,099.00          | Telephone .....                 | 137.90             |
| Interest on Deposits ..... | 357.11             | Stationery and Printing .....   | 320.17             |
| Clerical Work .....        | 105.01             | Postage .....                   | 346.28             |
| Directory, 1911 .....      | 5.00               | Rent .....                      | 900.00             |
| Directory, 1912 .....      | 60.64              | Insurance .....                 | 5.70               |
|                            |                    | Salaries .....                  | 2,064.10           |
|                            |                    | Committee on Legislation .....  | 129.90             |
|                            |                    | Legal Expenses .....            | 4,952.58           |
|                            |                    | Annual Meeting .....            | 250.88             |
|                            |                    | District Branches .....         | 287.48             |
|                            |                    | 1913 Directory .....            | 6,043.95           |
|                            |                    | Secretary .....                 | 500.00             |
|                            |                    | Com. on Experimental Medicine.. | 15.34              |
|                            |                    | JOURNAL Cost .....              | 4,449.58           |
|                            |                    |                                 | <u>\$21,758.36</u> |
|                            |                    | Excess of Income .....          | 879.40             |
|                            | <u>\$22,637.76</u> |                                 | <u>\$22,637.76</u> |

**REPORT OF THE COUNCIL.***To the House of Delegates:*

The Council of the Medical Society of the State of New York begs leave to present the following report:

During the past year meetings have been held on the following dates:

April 30, 1914, in New York City. Minutes will be found in the NEW YORK STATE JOURNAL OF MEDICINE, Volume 14, No. 5, page 284.

May 29, 1914, in New York City. Minutes will be found in the NEW YORK STATE JOURNAL OF MEDICINE, Volume 14, No. 8, page 423.

December 5, 1914, in Buffalo. Minutes will be found in Volume 15, No. 1, page 35.

Respectfully submitted,  
WISNER R. TOWNSEND,  
*Secretary.*

December 31, 1914.

**REPORT OF THE COMMITTEE ON PUBLICATION APPOINTED BY THE COUNCIL.**

At a meeting of the Council held in New York City, April 30, 1914, the following Committee on Publication was appointed: Drs. Floyd M. Crandall, Alexander Lambert, John C. MacEvitt, Victor A. Robertson and Samuel W. S. Toms. At the same meeting Dr. MacEvitt was appointed Editor.

**JOURNAL.**

The JOURNAL during 1914 was issued regularly each month; the edition being 8,500, an increase of 200 per month over the previous year. The cost for the year was \$1,313.55 more than in 1913. This was due to an increase in cost of the paper used, as shown in the cost of publication which was \$7,758.29, as compared with \$7,371.65. The other large item causing the JOURNAL to show a loss was the charging off of \$863.22 of doubtful debts. Every effort had been made to collect these during the past two years and some may be paid in the future if financial conditions should improve. During the past year collections in every line of business have been slow and publishers have especially felt the stress of hard times.

The increase in membership during 1914, and the expected increase of 1915 will necessitate a monthly edition of 9,000 for the year 1915.

During the past year the revenue to the Society from advertising was materially increased by the assistance of the Co-operative Medical Advertising Bureau of the American Medical Association, and but for its assistance the receipts would have been much less.

The edition of 1915 will consist of 56 pages and cover, and the outlook in advertising in both JOURNAL and Directory will depend upon the financial conditions during the coming year.

**DIRECTORY.**

The cost of publishing the 1913 Directory was \$6,043.95 for an edition of 8,000, a cost per

volume of 75.5 cents. There were but six copies of this edition on hand December 31, 1914.

The cost of publishing the 1914 Directory was \$6,380.76 for an edition of 8,400, a cost per volume of 75.9 cents. There were 519 Directories on hand December 31, 1914. Two hundred and fifty (250) of these books will be needed for the delinquents as they are reinstated, which will leave 269 volumes on hand. The sales have not been as good as usual and no accurate estimate can be made on future sales, but before the 1915 book is issued the directories on hand will be few in number. In order to decrease the size and expense for 1915 the Council at its meeting in Buffalo, December 5, 1914, approved the following resolution:

"That in order to reduce the cost of publishing the Medical Directory the committee recommends that in the 1915 edition all society data excepting the County, State, and National Societies and local and national Societies of Specialists, Academies of Medicine, and Hospital Alumni Associations be omitted.

"That the Benevolent Institutions in New York State, with the exception of the State Hospitals be omitted.

"That the data of the Board of Health of New York City be abbreviated as far as possible.

"That a less expensive cover be used."

For detailed statement of both Directory and JOURNAL see Report of the Treasurer.

Respectfully submitted,  
FLOYD M. CRANDALL, *Chairman,*  
ALEXANDER LAMBERT,  
JOHN C. MACEVITT,  
VICTOR A. ROBERTSON,  
SAMUEL W. S. TOMS.

December 31, 1914.

**REPORT OF THE COMMITTEE ON THE REGULATION OF THE INTRODUCTION OF MEDICAL EXPERT TESTIMONY.\****To the House of Delegates:*

It is the pleasure of your Committee on Medical Expert Testimony to report that owing to the chaotic condition of things in last year's legislation, that it was deemed wise not to introduce our bill. The bill will be introduced this coming year and we believe will have a good chance of passage. It is hoped to make a supplemental report to the House of Delegates at the annual meeting. Your Committee is willing to continue this work and we believe that we shall finally succeed in our efforts.

Respectfully submitted,  
DWIGHT H. MURRAY, *Chairman.*  
EDWARD D. FISHER,  
CHARLES L. DANA.

December 31, 1914.

\* Passed both houses, signed by Governor, Chapter 295, Laws of 1914, see page 202.

## REPORT OF THE COMMITTEE ON PUBLIC HEALTH.

### *To the House of Delegates:*

The Committee on Public Health begs respectfully to report that during the year past it has received no important communications upon matters concerning the public health, save one from the Committee on Public Health of the State Legislature, entitled, "An Act to Amend the Public Health Law, Relating to the Practice of Medicine," which was referred to the Committee on Legislation, and one below appended.

This committee has been interested in the manifest activities of the Department of Public Health of the state and the good work being done by it. We feel that the Medical Society of the State of New York should approve of and further the proposal of the department to find ways and means to give special education and training to the public health officers. Much of the inefficiency and confusion in public health matters might be abated, if those filling all or any positions were especially trained and educated to do so.

We cannot follow or agree with the attitude of the Commissioner of Public Health of the state, in opposing the compulsory vaccination of children in the public schools. The accident of tetany following vaccination is no condemnation of the procedure, and the danger is so remote, that it can hardly offset the danger of epidemic from failure to protect by vaccination. That such danger exists in large bodies of the public is too abundantly shown by statistics to be debatable; and we deplore any act looking towards letting down the bars.

We are in receipt of the Annual Report of the Health Officer of the Port of New York, Dr. Joseph J. O'Connell, for the year 1914. It is a model of brevity and terseness and gives evidence of efficiency, economy and modern scientific procedure. The new laboratory now completed and in running order is one of the finest of its kind in the country. The Health Office was fortunate in securing as its director, Dr. Oscar Teague, whose high scientific attainments and special quarantine qualifications render him peculiarly suited for the position.

After the European War ceases, there is reason to believe that the United States will be menaced with cholera and other highly communicable diseases, and it is to be earnestly hoped, that the Governor and all others in authority will be liberal in granting to the Quarantine Station of the Port of New York such appropriation of moneys as may be necessary in the judgment of the Health Officer to place it on a proper basis for the safeguarding of the port. We would reiterate the opinion expressed by us in a former report, that the Quarantine Station should remain a state and not become a federal institution.

It is difficult to form a reliable opinion as

yet regarding the operation of the new drug laws involving the sale and dispensing of cocaine and narcotics. That something had to be done seems, *prima facie* clear and the committee believes that these laws, with perhaps some amendments, which time and experience will suggest, will prove beneficial than otherwise.

Following is a set of resolutions submitted to this committee by the Secretary of the New York Committee for the Prevention of Blindness, which we believe should receive the careful attention and hearty endorsement of every member of the Medical Society of the State of New York, and we ask for its adoption by the Society:

WHEREAS, About 26.8 per cent of the total enrollment of pupils during 1914 at the New York State School for the Blind are blind as a result of ophthalmia neonatorum; and,

WHEREAS, Ophthalmia neonatorum is not necessarily a gonorrhœal disease nor a reflection on the virtue of father or mother, but an inflection which may occur in any labor; and,

WHEREAS, Blindness from ophthalmia neonatorum would practically never occur if a prophylactic were used in the eyes of every infant at birth, and if all cases of sore eyes among infants were promptly and adequately treated; and,

WHEREAS, The Committee on Conservation of Vision of the Council on Health and Public Instruction of the American Medical Association is endeavoring to have such uniform laws enacted in all states as will secure the adoption of these two measures; and,

WHEREAS, There are already on the statute books of the State of New York the necessary laws, and in the organization of the State and City Departments of Health the requisite machinery for the enforcement of these laws:

*Be it Resolved*, That the Medical Society of the State of New York approves the contemplated action of the State Department of Health to have all cases of redness or swelling or discharge from the eyes of newborn infants reported promptly in such a way as to secure adequate medical treatment for cases not in the care of physicians, or such assistance from the health officer in the shape of nursing or consultation or laboratory investigation as the attending physician may desire;

*And be it also Resolved*, That the Medical Society of the State of New York, furthering the efforts of the Council on Health and Public Instruction of the American Medical Association, endorse the effort of the State Department of Health and the New York Committee for the Prevention of Blindness to extend in New York State an educational campaign among laymen for the conservation of vision, and that the local medical societies be urged to lend their assistance in furthering prevention of blindness work in their respective communities.

*And be it also Resolved*, That the Medical Society of the State of New York recommends to the Public Health Council of the New York State Department of Health that it declare suppurative conjunctivitis a reportable disease as well as ophthalmia neonatorum.

The Sub-Committee on Public Health Education has held numerous meetings, but this year being the first of its existence, it is deemed wise to submit a Report of Progress.

Respectfully submitted,

JOSHUA M. VAN COTT, *Chairman.*

ALLEN A. JONES,

CHARLES STOVER.

December 31, 1914.

**REPORT OF COMMITTEE ON  
ARRANGEMENTS.***To the House of Delegates:*

The Committee on Arrangements begs leave to make a partial report,—that the House of Delegates will meet in the parlors of the Hotel Iroquois, Main and Eagle Streets, Monday evening, April 26, 1915, at 8 o'clock. That the Annual Banquet will be held in the Hotel Statler Wednesday evening, April 28, 1915, at 7 o'clock. Seats five dollars (\$5.00). Members are invited to include the members of their families. That all other events will take place in the 65th Infantry Armory, Masten, Best and North Streets, beginning at nine o'clock in the morning of Tuesday, April 27th, 1915. That an excellent restaurant will be found in the Armory. That the Bureau of Registration and Information has arranged for the careful handling of the mail of the members and guests; that paper, envelopes and stamps may be obtained on request for use in the library. That commodious wardrobes in the hands of responsible people will care for wearing apparel and packages. That local and long distance telephone and telegraph service will be in the building. That other than the banquet, the only entertainments will be an afternoon tea in the Armory at five o'clock; an auto trip to manufactories and about town for the ladies, tickets obtainable at the Bureau of Information; and a regimental review in honor of General William C. Gorgas, M.D., U.S.A., on Friday evening, April 30th. That no special rates can be obtained from the railway lines. That special street cars leave down-town for near points from nine to ten A. M. and from the Armory from five to six P. M. and at ten-thirty P. M. That taxi service has been obtained at reduced rates for members. That as the attendance will be large, delegates and members should make reservations early. That the exhibits, both commercial and scientific, promise a splendid opportunity to see the very latest advancements.

ALBERT T. LYTLE, *Chairman.*

March 20, 1915.

**REPORT OF THE COMMITTEE ON PRIZE  
ESSAYS.***To the House of Delegates:*

The Committee on Prize Essays would respectfully report that no essay has been presented for the Lucien Howe Prize for 1915.

Respectfully submitted,

A. VANDER VEER, *Chairman.*

JOHN F. W. WHITBECK,

EDWARD D. FISHER.

April 1, 1915.

**REPORT OF THE COMMITTEE ON  
LEGISLATION.***To the House of Delegates:*

The Committee on Legislation begs to present the following report:

The following bills were introduced but did not become laws:

"An Act to amend the Public Health Law, relative to the practice of medicine, providing that section 173 shall not be construed to include any person who ministers to or treats the sick or suffering by mental or spiritual means without the use of any drugs or material remedy." Introduced into Senate by Mr. McClelland, into Assembly by Mr. Thorn. Vetoed by Governor, April 23, 1914. A hearing was held before the Governor, April 13, 1914.

"An Act to amend the Public Health Law, prohibiting a licensed osteopathist to practice surgery unless he shall have passed the state examination for surgery; giving a physician who holds an osteopathist's license the same rights as the holder of any other license to practice medicine, and making the New York Osteopathy Society an incorporated medical society of the state for the purposes of the law." Introduced into Senate by Mr. Herrick, into Assembly by Mr. Conkling. Passed. Vetoed by Governor, April 24, 1914. Hearings were held before the Committee on Public Health on March 11th, and before the Governor on April 13, 1914.

"An Act to amend the Public Health Law by providing for a State Board of Examiners for the practice of chiropractic and for the payment of license fees." Introduced into Senate by Mr. Boylan. To Public Health Committee. Amended and recommitted. Passed. Introduced into Assembly by Mr. Kerrigan. Amended and recommitted for reconsideration. Motion for reconsideration lost.

"An Act to amend the Public Health Law, by providing for a state board of naturopathic examiners to consist of three members appointed by the Governor for a term of five years. Naturopathy is described as a form of natural treatment (excluding use of all drugs) including scientific water cure (not Turkish baths) known as hydrotherapy, neuropathy, scientific manipulation of any kind." Introduced into Senate by Mr. McClelland. Reported to the Committee of the Whole. Passed. Introduced into Assembly by Mr. Jones. To Public Health Committee. Reported to third reading. Killed.

"An Act to amend the Public Health Law, relative to the issuance of medical licenses, and defining 'unprofessional conduct.'" Introduced into Senate by Mr. Seeley. Reported amended to the Committee of the Whole. No action taken.

"An Act to amend section 290, State Charities Law, by eliminating from the description of 'Dispensary' any institution furnishing medical or surgical treatment for a compensation determined without reference to the value of the thing furnished." Introduced into Senate by Mr. Duhamel, into Assembly by Mr. Nelson. Reported to the Committee of the Whole. Lost.

"An Act to amend the Penal Law, and add new paragraph, making it a felony, instead of a misdemeanor, as at present, to sell or possess cocaine or eucaine in violation of the provisions of the Penal Law." Introduced into Senate by Mr. Frawley. Amended and recommitted. Passed. To Judiciary Committee of the Assembly. Passed. Vetoed by Governor, April 24th.

"An Act to amend the Penal Law, by prohibiting the retailing of bichloride of mercury, except upon the prescription of a duly registered physician." Introduced into Senate by Mr. Blauvelt. Reported amended. Lost.

Similar bill with addition that if sold in tablet form, tablets must be triangular and blue in color. Introduced into Senate by Mr. Heffernan. No action taken.

"An Act adding new section to Education Law, providing that a parent should not be required to send a child to school in case the child must be vaccinated." Introduced into Senate by Mr. Thompson, into Assembly by Mr. Williams. Reported adversely. Killed.

"An Act providing for the appointment by the State Regents of such number of persons to represent it as shall be necessary for the proper supervision of animal experimentation within the state." Introduced into Senate by Mr. Boylan. Not reported out of committee.

"An Act directing the Governor to appoint a commission of seven members, two of whom shall be physicians or persons experienced in the practice of vivisection, two active members of an organization to prevent cruelty and three lawyers, such commission to investigate and report within one year the condition and extent of practice of human and animal experimentation in this state, especially upon the children in hospitals, without their consent." Introduced into Senate by Mr. Herrick, into Assembly by Mr. Gallup. Hearings were held on these bills. Not reported out of committee.

"An Act to amend Greater New York Charter by repealing certain sections, and adding a new section, directing the Mayor to appoint a chief medical examiner of the City of New York, who shall succeed to all powers, duties and liabilities of the coroners. He shall appoint assistant medical examiners." Introduced into Assembly by Mr. Brennan. Amended and recommitted. Motion to discharge committee lost.

"An Act to amend the Greater New York Charter providing that the trustees of Bellevue and allied hospitals may establish boards and bureaus as are essential, and prescribe rules for the conduct thereof, and pay medical officers in whole or part." Introduced into Senate by Mr. Herrick, into Assembly by Mr. Conkling.

The following bill after receiving the signature of the Governor became Chapter 363, Laws of 1914:

"An Act adding new article 11a, entitled 'Habit-Forming Drugs,' to the Public Health Law, regulating the sale of such drugs." Introduced into Senate by Mr. Boylan, into Assembly by Mr. Kerrigan.

Respectfully submitted,

LEWIS K. NEFF, *Chairman,*

J. RICHARD KEVIN,

JAMES F. ROONEY.

December 31, 1914.

#### REPORT OF THE COMMITTEE ON MIDWIVES.

*To the House of Delegates:*

Your committee appointed in pursuance of the following resolution passed at the Annual Meeting of The Medical Society of the State of New York held April 28, 1914:

WHEREAS, The demand for better obstetric care has directed increased attention to the practice of midwives; and,

WHEREAS, Necessity demands that the supervision and training of midwives should be undertaken by the state; and,

WHEREAS, At the present time there does not exist in New York State any such supervision and regulation; therefore, be it

*Resolved,* That the President of The Medical Society of the State of New York appoint a committee of five members who shall immediately after their organization begin a study of the subject as it presents itself in this state, and file their report with the House of Delegates of the State Society at its meeting in 1915.

Beg to make the following report:

The personnel of the committee was changed by the resignation of Dr. John A. Sampson, Albany, and the appointment by the President of Dr. George W. Kosmak, New York City.

The committee have held four meetings and endeavored to obtain as much information as possible by correspondence.

The committee are indebted to Drs. S. Josephine Baker, J. Clifton Edgar, William E. Studdiford, Miss Van Blarcom, the State and New York City Boards of Health and the eighteen sanitary supervisors of the state.

From the beginning of the investigation to the present time, the scope and importance of the work has grown until the committee have realized that before any complete and exhaustive study with the necessary recommendations could be made, it would require two or more years' work. In view of the importance of this subject, and the necessity for proper representation of The Medical Society of the State of New York in the activities connected with the practice of midwives, it would be desirable to have a committee, such as the present one, made a more or less permanent feature of the Society's work.

In taking up the matter the Committee have found that the problem can be divided into two heads, that of the City of New York and the remainder of the State. This division is arbitrarily made because there are five times as many midwives in New York City as there are in the balance of the State. There are 1,448 midwives in the City. Under the new Sanitary Code there have been registered slightly over 264 at Albany. The midwives of New York City delivered 52,997 children last year. The number of deliveries by the remainder has not yet been determined. Many of the counties of the State have no midwives, as their work seems to be usually among the foreign and factory population. It requires but a glance to realize that the problem in New York City is a complex one when one considers that the entire capacity of the lying-in hospitals is 11,000 births per year, and that the midwives deliver over four times as many.

In the City of New York the local Board of Health has formulated very definite rules regarding the practice of midwives and a similar situation exists in the cities of Rochester and Syracuse. In other centers it was found on inquiry that the midwives practiced without any definite control, either by the local Board of Health or otherwise. It seemed to the Committee desirable to recommend a more uniform system of licensure to be applied throughout the State with such modifications as might be demanded by local conditions.

Approaching the question from a purely ethical viewpoint, the natural decision reached is to abolish the midwife. This your Committee believes is impossible at the present time, although

it is hoped that eventually some substitute will be had so that the midwife, finding her occupation gone, will leave the field to those who are qualified to practice medicine. The practical question, therefore, resolves itself into educating and improving the midwife so that her work will be of such a character to at least partially excuse her existence.

It is the belief of your Committee that the midwife practices medicine, and in so doing violates Medical Practice Act, Chapter VIII., of the general Public Health Law.

The first effort of the State Board of Health to face this problem by bringing out Chapter 4 of the Sanitary Code relative to the registration of midwives was made January 1, 1915. Your Committee at first believed the requirements too low, and only after many conferences are they at length convinced that this is a step in the right direction, and will eventually be productive of great good by giving to the State Board of Health the knowledge of the existence of the midwife and her field of labor, and enabling them in the future to better control the situation.

Respectfully submitted,

JOHN VAN DOREN YOUNG, M.D.,  
*Chairman;*

O. PAUL HUMPHSTONE, M.D.,  
FREDERIC W. SEARS, M.D.,  
PETER VAN PEYMA, M.D.,  
GEORGE W. KOSMAK, M.D.

April 1, 1915.

#### REPORT OF THE COMMITTEE ON SCIENTIFIC WORK.

*To the House of Delegates:*

The Committee on Scientific Work begs permission to report that the several programs are nearly completed.

At the May meeting of the Council it was determined to inaugurate a section on syphilis under the chairmanship of Dr. Fordyce. The program for this section, now practically completed, amply justifies their decision and the wisdom of their choice.

Contributors have been strictly limited as to space in order that the programs may not be crowded, and sufficient time may be available for full discussion.

While certain men have been chosen for the discussion of papers it is particularly desired that the members at large shall participate to the fullest extent.

All arrangements for the meeting are well under way or completed, and it is the determination of the men in charge to make it the "best ever."

Respectfully submitted,

THOMAS H. MCKEE,  
*Chairman.*

December 31, 1914.

#### REPORT OF COMMITTEE ON MEDICAL EDUCATION.

*To the House of Delegates:*

The Committee on Medical Education have the honor to submit the following report:

*First:* It is gratifying to note that the trend of medical education is in the direction of a better and broader preliminary education. Finished product must reflect the quality of the material from which it is made. Twenty-five states are requiring one year of collegiate work in advance of the High School.

Seven of the twenty-five states are now requiring two years of collegiate work in addition to a standard four year high school education. Thirty-nine colleges are requiring the two years of collegiate preliminary preparation and as noted seven licensing boards have adopted this standard.

It is manifest that the requirements for education preliminary to the study of medicine in the State of New York should be raised at least to conform to the standard adopted by the Council on Medical Education of the American Medical Association. While a minority of your Committee feel that the ideal standard would be a preliminary requirement of two years of collegiate work in addition to a four-year high school education, the majority maintain that what is immediately desirable is to urge the State Board of Regents to adopt as a standard of preliminary education—one year of collegiate work, including courses in physics, chemistry, biology, and a modern language, preferably French or German, in addition to a four-year high school education.

*Second:* The subjects upon which the State demands examination should be as follows:

Anatomy, Physiology, Chemistry, Bacteriology and Pathology, Hygiene and Preventive Medicine, Obstetrics, Surgery, and Internal Medicine excepting Therapeutics. This change omits Diagnosis, changes the name of the course to Hygiene and Preventive Medicine instead of Hygiene and Sanitation, and adds Internal Medicine without treatment.

*Third:* The character of the examination of candidates seeking the license to practice medicine encourages the quiz cramming methods and discounts the real knowledge of how to make a clinical examination and arrive at a diagnosis:

The Regents should require practical laboratory and clinical tests at their examinations, by which the student's training in those departments of medical instruction may be guaranteed.

*Fourth:* It is not the function of the medical school to impose a fifth hospital year, because no medical school has control of all the hospitals into which its graduates will go as

internes and consequently can have no supervision of the education which they will obtain in such hospitals. To meet this desirable qualification we recommend that the Regents of the State of New York require that every person who is to enter the practice of medicine after a certain date shall have taken at least one year as an Interne in a hospital registered by the Regents of the State of New York as meeting its standards for teaching hospitals.

*Fifth:* The efforts of the medical profession and the Universities have succeeded in raising the standards of medical education in the United States to a high degree of proficiency. Each year witnesses at Albany efforts to secure special legislation which tends to impair our medical educational standards. "Medical legislation should know no class and provide no special privilege." Competency must be measured by a fixed standard to which all who seek to treat human ailments should conform. The basis of such competency is the possession of sufficient knowledge to enable the candidate to recognize the disease he attempts to treat.

We care not what therapeutic measures be used in the treatment of disease, we insist only that the same education standards apply to all.

Respectfully submitted,

WILLIAM FRANCIS CAMPBELL, *Chairman*,  
GEORGE R. CRITCHLOW,  
WILLIAM P. HEALY,  
JOHN L. HEFFRON,  
ABRAM T. KERR,  
SAMUEL W. LAMBERT,  
ROSALIE S. MORTON,  
WILLIAM H. PARK,  
HERBERT U. WILLIAMS,  
JOSEPH D. CRAIG.

December 31, 1914.

#### REPORT OF THE WORKMEN'S COMPENSATION COMMITTEE.

*To the House of Delegates:*

GENTLEMEN: At the annual meeting of the House of Delegates in 1914 the Secretary of the Society made the following recommendation:

"The Workmen's Compensation Commission will be appointed early in the year before the meeting of the State Organization, and it would seem desirable to the Society at this meeting to appoint a committee of not less than five members representing different parts of the state to appear before this Commission from time to time to present the views of the profession on the questions that will come up for solution, especially those that will affect medical men."

This recommendation was approved by the House. This Committee was not appointed until a month later, on May 29, at the meeting of the Council held in New York on that date

At that meeting of the Council various members of the claims departments of the insurance companies, Mr. Archer, Secretary of the Ohio Industrial Board, and Dr. Darlington of the State Commission, appeared before the Council and desired to be heard regarding the question of fees to be charged in the work under the Workman's Compensation Law. The Committee was instructed to take up these questions with these gentlemen and to endeavor to obtain harmonious action between the Medical Society of the State of New York and the various insurance companies, and to appear before the Workman's Compensation Commission at any time it was necessary in the interest of the medical profession. At the first meeting of the Committee, held on the morning of May 29, after the adjournment of the Council, it was realized that there was but a month before the Workman's Compensation Law would go into effect, and it was necessary to act quickly in the matters that had been referred to the Committee by the Council.

The first question that arose was whether or not a fee bill should be drawn up and compared with the fee bill of schedule rates offered by the representatives of the insurance companies. If no fee bill was drawn up, it did not seem possible to have any standard by which the insurance rates could be judged. The Workman's Compensation Law itself provided medical and surgical care for those injured in forty-two groups of so-called hazardous employment, not including farm laborers and domestic servants; and, furthermore, the law provided that these fees should be limited to such charges as prevailed in the same community for injured persons of like standard of living. It seemed, therefore, necessary to gather some information regarding fees throughout the various counties of the State. The secretary of each county society was requested to furnish the fee bill of his society or an expression of opinion regarding the fees in his community, especially the average of each house and office visit in his county. Twenty-seven fee bills were received. These were tabulated and compared with the fee bill as presented by the insurance companies. The schedules thus obtained showed that the flat rate proposed by the insurance companies was, in the majority of instances, between the minimum and maximum rate for similar services in the various fee bills, and with one exception, that for a fractured metacarpal or metatarsal bone, the rates of the insurance companies were always equal to or higher than the minimum rate of the fee bills. The rate proposed by the insurance companies for house visits was \$1.50 and subsequent visits \$1. The Committee insisted that all house visits should be \$2 and that office visits should be \$1; also that all visits in hospitals or dispensaries should be charged for at the office rate of \$1. There was no provision made for

such visits in the original fee bill of the insurance companies. This addition was made because in many towns and cities hospital and dispensary visits would form a large proportion of visits rendered. This schedule of daily visits was at first strenuously opposed by the representatives of the insurance companies. From the statistics published in the report of the Massachusetts Compensation Commission, it is evident that three-fourths of all charges come under the heading of the house and office visits. Therefore a raise of 50 cents for each home visit, and with no fee less than \$1, made a very considerable difference in the amount that would be paid to the profession. This, however, was finally agreed upon.

Against the acceptance of a fee bill by the Committee of the Medical Society it was realized that the insurance companies would have a fee bill under any circumstances, that from the very nature of their business they are forced to have definite schedules and definite rates to offer to the employers of labor in order to have definite figures on which to base the insurance rates. If the Medical Society could come to no agreement with them, it was very evident that the insurance companies, controlling the majority of the insurance business in this State, would go among the members of the profession, and by bidding for work would soon be in the position of underbidding one doctor against another, and would bring the whole status of physicians employed by insurance companies down to the objectionable forms of contract practice. It seemed, therefore to the Committee, taking into consideration all these matters for and against a fee schedule, that it was advisable to agree to accept the amended fee bill as a fair standard for one year. The Chairman of the Committee signed the fee bill for the Committee under instructions from each and every member of the Committee so to do. The Committee deemed its action of such importance that a preliminary report, including the fee bill, was made to the President and published in the August, 1914, number of the *New York State Journal of Medicine*. It was fully realized both by representatives of the insurance companies and by the members of the Committee of the Medical Society that this schedule could not bind any one who had not individually signed it. It was signed by the Committee as being in its opinion a fair standard of fees for work of such character as would come under the Workman's Compensation Law. It was not signed as a final settlement of standard rates, but as an endeavor to reach a fair standard and, as such, should be tried for one year. The Committee then appeared before the Workman's Compensation Commission and presented this schedule to it as being in the opinion of the Committee a fair guide for minimum fees for medical and surgical services which would arise under the law. The

Commission informed the Committee that while they could not accept it as a standard, and while they could not formulate any standard and could not accept any agreement as such, they expressed their appreciation that the Committee should appear before them, and also that the Committee had expressed an opinion of what might be considered a fair standard for such work. As an expression of opinion the Commission was glad to receive the fee bill and appreciated the cooperation that the Medical Society, through its Committee, was endeavoring to show. It was worthy of note in the discussion at this meeting that one or more members of the Commission expressed themselves that it was their personal opinion that some of the rates, especially that of daily visits, were higher than was usually paid among workmen for medical and surgical services of like character. The Commission further explained to the Committee that they were bound by law to treat each individual case, from whatever part of the State the claim came, according to the fees which prevail in that section for similar treatment of injured persons of a like standard of living. According to the law, the Workman's Compensation Commission is the final arbiter of all claims arising under the law. This fee schedule, therefore, had no standing before the Commission except as an expression of an opinion by the Committee. The Commission, however, in sending out copies of this fee bill has had printed on each copy the note that while the Commission has not accepted this schedule, it will no doubt be guided by it in the adjustment of physicians' accounts.

The Committee, therefore, has accomplished the following results: By meeting with the representatives of the insurance companies and by coming to an agreement with them on this fee bill the Committee has succeeded in raising the fees paid to the profession in three-fourths of the cases coming under the Workman's Compensation Law over that which would have been paid to the profession without the agreement between the Committee of the Medical Society and the insurance companies. It has prevented the possibility of various corporations doing insurance work underbidding one doctor against another and thus bringing an agreement between any physician and the insurance companies down to the plane of objectionable contract practice. It has placed the organized profession of the State in a dignified position of agreement and cooperation with those in authority who are endeavoring to put in force a new social law and social condition. It has prevented the profession from being placed in the false position of indifferent aloofness which inaction would have accomplished.

The Committee realizes that there has been much misunderstanding of its action by the profession at large and realizes that it has been severely criticised from many quarters. It has



been claimed that by publishing and indorsing a fee bill applicable to the entire State the Committee acted contrary to the law. There is nothing in the law which permits or forbids or in any way deals with fee bills. The terms of the law are that the medical and surgical fees shall be limited to such charges as prevail in the same community for injured persons of like standard of living. As has been already explained, any fee bill is only binding between the individual who signs it and the insurance company with which he agrees to work according to that schedule, and it is only binding to such individual the same as any other agreement on any other subject would be binding. The Commission has distinctly stated that it cannot be held to or use any such fee bill except as an expression of medical opinion as to what should be a standard when considering the justice or injustice of any given charge for any community. No fee bill pretends to usurp the powers of the law or replace that which is already in the law.

That the State Society by so publishing a fee bill attempts to usurp the rights of County Societies and other bodies and, therefore, works injustice to the local physician, is another criticism which does not hold good. The State Society does not usurp any right of any County Society by so doing. County fee bills are notoriously not lived up to, and if the State Society by publishing a standard prevents the insurance companies from using the varying fees in one county against another to underbid the individual physician, instead of usurping the rights, it protects the rights and strengthens the position of both the County Societies and their individual members. A standard which is acknowledged to be a fair average standard for the State does not injure the local practitioner but protects him. It prevents underbidding by the corporations which would force him on miserable wages to accept an objectionable kind of contract practice.

It is claimed that the fee bill as published is too low for the more common and less complicated accidents. It is no lower than the twenty-seven fee bills published and claimed to be lived up to by the various counties so publishing them. It is no lower than the counties themselves have published as being the minimum fee standard for general practice. This fee bill does not pretend to be a fee bill for general work; it is a fee bill only for workmen injured under the Workman's Compensation Law and whose average wage, as shown by the researches of Scott Nearing in three-fourths of the men and nineteen-twentieths of the women east of the Rockies and north of the Mason and Dixon line, is less than \$600 a year. It can be said, then, that this schedule is for men whose wages for the year average between \$600 and \$1,200, and the majority of workmen earn nearer the lower than the upper limit of this wage.

There has been a criticism expressed that the

fees published discriminate in favor of surgeons on hospital staffs, because such staffs can treat at much less individual expense. This may be true, and undoubtedly is true, in certain instances. The Committee is unable to report on any fixed action by various hospitals in the State. It believes, however, that the Workman's Compensation Law will bring about a fairer return for work done in the hospitals than is at present given to physicians and surgeons and will bring remuneration for work done in the hospitals where heretofore the services aggregating huge amounts have been given entirely in charity. It will bring about the correction of many abuses which have gradually grown up in this connection.

In discussions heard in medical societies there have been statements made that the Workman's Compensation Law tended to force the profession to accept certain set fees for work done, that the State had no right to regulate the fees of the medical profession, and that the physicians would not permit the State to thrust down their throats any given set fees. The State has regulated the practice of the profession of law and has regulated certain fees under certain conditions in such practice, and if the State so chooses it can regulate the fees of the medical profession and can limit or extend the privileges given to the medical profession as the State sees fit. Members of the medical profession, if this occurs, will have to accept the restrictions, whatever they may be, or else cease to practice medicine and turn to other fields of endeavor. This has been done in England and on the continent of Europe, and the sooner that this is clearly recognized by the profession in this State the sooner will an enormous mass of inaccurate statements cease to be made.

The question of whether or not a fee bill should be put forward by the State Society is an open question. Many physicians in the community hold that it should not be done. It is claimed that any special fee bill, such as this fee bill for charges under the Workman's Compensation Act, if different and lower than any general fee bill for general work in the same community, is harmful to the general practice of medicine and is harmful to the individual practitioner, because the lower fee bill for special work tends to replace the higher bill for general work, and whenever there have been two separate bills, the lower has always tended to replace the higher and the general standard of fees obtainable by the profession has thus been lowered. If these facts be true, it presents a valid objection. But the profession must recognize that a new economic principle is under trial, and there is no reason to doubt but that the results here will be the same as have occurred in England. Before the National Insurance Act in England went into effect the sum total paid to the profession was very much less than is paid to

the profession today. Without doubt some individuals have suffered a reduction of income, but the incomes of the large majority of the profession have been materially increased. In England no physician is compelled to work under the National Insurance Act, nor is such compulsion in force in New York State under the Workman's Compensation Law.

It has further been claimed that the signing of any fee bill by any member of the Society constitutes contract practice and that contract practice is unethical. The House of Delegates of the American Medical Association two years ago, in Minneapolis, accepted the dictum of the Judicial Council that contract practice in itself is not unethical, because all forms of medical service by medical men working under salaries are contract practice, and all forms of medical service under salary are certainly not unethical. There are certain forms of contract practice which are bound to exist, and it is foolish to place them on anything but a legitimate basis. The unethical contract practice is that which does not give a fair wage for work done, that in which underbidding of physicians against each other is practiced, and in which physicians are thus forced to work for wages vastly below the remuneration which should be given them for such services. This form of contract practice is unethical, and it also should be considered unethical for physicians to underbid each other at starvation wages. As long as this fee bill gives a fair remuneration for work done, the signing of it is not an unethical practice.

The Committee desires to call attention to one part of the fee bill which, after trial, it considers objectionable; that is, the flat rate for first aid operation and full treatment, which comprises the first column of the charges under the fee bill. The Committee believes that this flat rate, which includes all after treatment as well as the original treatment, should be abolished. It works a definite injustice in many instances, as it prevents any differentiation between the mild and severe cases of the same injury and often deprives the surgeon of his just reward in the prolonged and difficult cases.

Another charge which seems unjust now that the Committee has had sufficient experience to judge is that of large wounds requiring extensive suturing and dressing, the flat rate of which is only \$7.50. That can well be considered an inadequate recompense for the time, skill and dressings necessary for the proper care of such injuries. The Committee realizes that the present fee bill needs revision and rearrangement of some of its charges, and, further, that it may perhaps be claimed that because fractures require more work and more care and greater skill than amputations, it is a question whether or not the fees for fractures should not be higher than those for amputations, although in all fee bills the reverse has been the case. These considera-

tions and discussions the Committee would leave to its successors to take up with the insurance companies before the first of July, when this present fee bill ceases by limitation.

The Committee believes that the economic questions involving the medical profession under the Workman's Compensation Law are of such importance to the profession that the State Society should have a special committee to interest itself in these problems. The Committee believes that these questions are of such importance that they require persistent study and painstaking work which no committee changing and varying from year to year can well fulfill with justice to itself and to the profession. The Committee, therefore, would recommend to the House of Delegates that the Workman's Compensation Committee of the Medical Society of the State of New York be continued and that it be authorized to meet the representatives of the insurance companies to arrange with them a new fee bill, and that the Committee report its findings to the May meeting of the Council.

Respectfully submitted,

ALEXANDER LAMBERT, *Chairman.*  
FREDERICK H. FLAHERTY,  
JOHN J. MOORHEAD,  
JAMES S. COOLEY,  
FRANK VAN FLEET.  
THOMAS H. MCKEE.

March 20, 1915.

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#### REPORT OF THE COMMITTEE ON MEDICAL RESEARCH.

*To the House of Delegates:*

The Committee on Medical Research begs to report that during the season of 1914 the following bills to regulate animal experimentation were introduced into the Legislature.

By Mr. Boylan, into the Senate, "To prevent cruelty by conferring upon the Board of Regents of the University of the State of New York the power of supervision of experiments on living animals."

By Mr. Herrick, into the Senate, "To create a commission to investigate and report upon the condition of the practice of human and animal experimentation in the state of New York, to show what regulations are necessary to prevent cruelty to human beings or animals; and likewise to prevent any abuse of or interference with the private rights of human beings in our charitable institutions and elsewhere, by experimentation upon them without their authority and consent."

By Mr. Gallup, into the Assembly, "To create a commission to investigate and report upon the condition of the practice of human and animal experimentation in the state of New York, to show what regulations are

necessary to prevent cruelty to human beings or animals; and likewise to prevent any abuse of or interference with the private rights of human beings in our charitable institutions and elsewhere, by experimentation upon them without their authority and consent."

These bills were referred to the Committee on Judiciary of the Senate and Assembly. They were not reported out of Committee.

Respectfully submitted,

FRANK VAN FLEET, *Chairman.*

December 31, 1914.

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#### REPORT OF THE COUNSEL.

*To Dr. Grover William Wende, as President, and to The Council and House of Delegates of the Medical Society of the State of New York:*

GENTLEMEN:

I have the honor to transmit to you herewith my report for 1914 referring to malpractice defense:

The number of actions brought during 1914 is less than the number of actions brought last year.

More actions have been disposed of during this year than during any year before. Of the actions actually begun during the year 1914, eight have been disposed of by Court proceeding and in favor of the defendants. If you will examine my report of the year 1913 you will find that the only case lost is one brought in Wayne County; the verdict was \$500. The case was appealed and the verdict was reversed. I have no doubt that the case has been finally terminated in favor of the doctor.

During the past year one case was lost, tried in the City Court of the City of New York. The claim was based on the allegations that the doctor attending a five days' old child had cut into its finger in attempting to remove a bandage. The bandage had been put on by some other surgeon to support a shoulder which had been fractured in childbirth by a midwife. This case has been appealed to the Appellate Term of New York, and the case is now undecided and in the hands of that Court. The father's case, tried at the same time, was dismissed. This is the only outstanding verdict in upwards of fifteen years. No doctor defended by the Society has ever been called on to pay a single dollar of damages.

The large number of cases brought during this year only bears out my report of last year, to the effect that physicians are relying upon the State Society more and more, and with greater and increasing confidence.

Your counsel believes that the number of private settlements by doctors has now been re-

duced to such a small percentage as to justify the belief that practically all members of the State Society rest confidently upon your efforts in cases where negligence is charged against them.

Cases defended by insurance companies have been lost during the year, largely due to the fact that the jury becomes advised that physicians are so insured, and render a verdict against the defendant on the theory that the insurance company has to pay, but are entirely unmindful of the effect of a verdict on a physician's reputation, which is most serious.

Many physicians who are defended by insurance companies have, during the past year, called upon your counsel for active help, and it is rather interesting to note that in all these instances the insurance companies are only too glad to stand aside and let your counsel conduct the case. This does not, however, remove the danger of a policy. It is time that the House of Delegates took some affirmative action in order that the insurance companies who reap the benefits should not be permitted to make use of the State Society to pull their chestnuts out of the fire.

The effort of the State Society is exercised for an entirely different purpose, and unless some resolution is adopted declining defense to doctors who have insurance policies, the defense conducted by the State Society will lose its force and efficiency. It should be stopped at once. No member of the State Society who wants to be insured against his negligence should be defended by your counsel. Members of this great profession should not place themselves in the position of seeking indemnity against their own carelessness; it should be, by statute, made unlawful. The relationship of the doctor to his patient is such as to make insurance against his carelessness entirely incompatible with his effort.

From the foregoing it is obvious that the work of counsel for the last year has been greater than any preceding year, and has been most satisfactory.

The cases begun during 1914 are as follows:

1. The defendant in this action was called to account by a patient who suffered with severe pains and weakness in her stomach and bowels. He was held responsible because it was claimed he had made a wrong diagnosis and subjected her unnecessarily to surgical operation, and she finally had a miscarriage.

2. Your counsel was brought into this case as adviser in an action wherein a woman sued the defendant for his negligence in taking care of her in childbirth, during which she had severe complications. The defendant's attorney is a resident of the county where the action was brought, and the hospital where the woman was cared for is also made a defendant. This case will probably be tried within the next month or two.

3. This action is brought against a very well-known surgeon, and the claim against him for negligence is that while he turned to bandage a finger, his patient fell to the floor and broke his nose. The situation presented here is rather amusing than otherwise, and it

is extremely doubtful if the case will ever actually come to trial, although the attorney now seems to be quite insistent about it.

4. This action pertains to a case of a seven-year-old boy who was found by the doctor to be suffering from septic infection in the abdominal cavity. The doctor advised immediate operation, which the parents declined. Counsel was secured from a nearby city, and an operation again demanded. A series of abscesses developed in various parts of the body, one in the hip, where trouble was encountered. The doctor has not yet been sued and no application blank has been sought, but your counsel has examined the statement of the doctor and advised him as to his future course.

5. This action is against a member of the Society and against one of the hospitals of New York City. The patient came to the hospital and was placed under the attending surgeon's care in that hospital. The allegations are that the plaintiff complained of tri-facial neuralgia, and that during the treatment the patient was assaulted in that she was unlawfully strapped by the arms and legs and locked in a room. This case is not one strictly within the retainer of your counsel, but is one that should be defended by the Society because it is an absolutely unwarranted attack.

6. This case is one charging the doctor was careless in the delivery of a child. The doctor found the patient suffering from heart trouble, and he was obliged to apply forceps, and the delivery resulted in a perineal tear. Without warning the patient's condition became grave a short time after the delivery, and she died. Her husband begins an action for loss of services and loss of consortium.

7. This action was presented in two complaints, and it was claimed that the plaintiff's leg was fractured and the bones of his feet dislocated. The plaintiff claims that he was taken to a hospital and was there treated by one of the doctors "employed as a surgeon by the said hospital," and it is claimed that the doctor was negligent in dressing the plaintiff's foot in a workmanlike manner, and that the plaintiff was permanently injured and crippled.

8. This action was brought against a physician for the therapeutic misuse of the X-rays. The plaintiff contends in his complaint that the defendant guaranteed that no harm or injury would result from his treatment, and that no mark or disfiguration would appear after such treatment, and she claims that she was disfigured on the left side of her face and that she is damaged in the sum of \$20,000.

9. The plaintiff in this action claims that he received injuries to his left leg and knee, and that he employed the defendant to take care of him, but that the doctor failed to use proper appliances and took care of the leg and knee so heedlessly that the tendons, ligaments and muscles of his leg, which had been separated, remained separated, and that they now have shortened to such an extent as to render the leg "practically useless." It is claimed that the defendant's carelessness also caused running sores to appear on the leg, from which he suffered and still continues to suffer. There does not seem to be much anxiety on the part of the plaintiff's attorney to try this case, although of course he may determine to do so.

10. This action arises from a doctor having begun an action against his patient to recover for his services. The action was brought in the Municipal Court in New York County by another attorney, and as soon as the malpractice feature was set up your counsel was called in and has now taken charge of the case. The questions involved in this case relate to an operation on the eye. The attorney who originally brought the action remains connected with the case, but when the action is tried your counsel will be required to take charge of it.

11. In this action the only process of the court which has been served is the summons. Your counsel has served a notice of appearance, and although the same was served last July, no complaint has yet been re-

ceived. The statement in the case shows that a child was taken ill after eating some unfit material, but by reason of the fact that no complaint has been served, it is impossible to state exactly what the plaintiff may claim. A motion to dismiss will be made soon.

12. This action was begun to recover for damages against a doctor who, it was alleged, was careless and negligent in taking care of a broken leg. There are two defendants in this action. The chief claim of the plaintiff is that the doctors improperly wired the bones of the leg in such a way that the muscles became torn and inflamed. In the judgment of your counsel there is not a semblance of a case against these doctors.

13. This action was brought against a physician, and incident to it the plaintiff's counsel suggests that the State Society should not defend him because he is the doctor for a lodge. I can see no reason for any such contention, and have appeared for the doctor and served his answer. The action is based upon an allegation that the patient has a malformation of the wrist and that he was not properly cared for.

14. In this case your counsel has been asked to act as adviser in a controversy with a Health Department. An application blank was signed and the case referred to me. The question involved was one in which a doctor was criticised for not establishing a strict quarantine in a diphtheria case, and it was contended that one of the pupils in a school contracted the disease. Your counsel will take such part in it as he is able, but the local attorney for the defendant will doubtless look after the case.

15. This is an action brought against a defendant in which it is charged that he was careless and negligent in operating on a goitre, which the plaintiff alleges consisted in cutting the neck and tying both the superior and inferior arteries so as to keep the blood supply from the glands. The patient was given medication which the plaintiff claims also was improper and unskillful. The plaintiff claims that she was badly scarred, and that she was not given a general anæsthetic and unnecessarily subjected to pain.

16. This case refers to the carelessness of a doctor incident to the setting of a woman's wrist, and the claim, as evidenced by the lawyer's communication, is that the patient has a malformation of the wrist and that she is unable to attend to her household duties. Your counsel wrote to the doctor that it was necessary for him to apply for malpractice defence and to send a detailed story of the case, but evidently the action has never been begun because no application blank has been filed with your counsel.

17. This action was introduced by a letter from an attorney in which he says: "Rather than give this matter the notoriety of a lawsuit, and feeling that you are deserving of better treatment than to be sued, I ask that you send your legal representative to call upon me," etc., etc. The matter referred to in the letter was a broken leg, and as the doctor has not applied for defence, and so far as your counsel knows no action has been begun, it is presumed that the courteous attorney has taken no further steps.

18. This action was brought to recover \$10,000 on behalf of an infant. The basis of the complaint is that the doctor, without any cause, cut away and removed from the plaintiff a part of his tonsil and part of his soft palate and all of his uvula, but that he did not remove his adenoids, and that he was therefore negligent in both respects. The attorney in this case states a separate cause of action in addition to the above, in which he says that the removal of the soft palate and the uvula was entirely unnecessary. This case will probably be tried in a few weeks.

19. This action is based upon a secondary operation for Hallux Valgus. The gentleman who came in to discuss this case with me, while once a lawyer, is no longer one, the Appellate Division having considered that his official connection with the court should be terminated. It was claimed that another surgeon had criticised the doctor's work, and in answer to a frank

inquiry by the proposed defendant, the second surgeon wrote a very reassuring and convincing letter; and while it is possible that some shyster might get hold of this case, a recovery is impossible. I am watching with a good deal of interest the further progress of the case, because I believe it is one where prosecution should be undertaken. I cannot go further with the description of this case at this time, but if any development appears in it, your counsel will take active part in the matter, perhaps in another branch of the court.

20. This action is one brought by the father of a deceased child, wherein the plaintiff claims that the doctor was careless in his diagnosis of a case of diphtheria. It is claimed that the doctor failed in his diagnosis absolutely, and consequently did not give the child proper attention and medication. The amount demanded in this case is \$10,000.

21. The plaintiff in this action complains that the doctor was called upon to examine, and if necessary, operate upon the decedent for a falling of the womb, and that finally he did actually perform an operation on the decedent. It is claimed that the patient was not in a physical condition to undergo it. It is charged, incident to this case, that the doctor in his operation cut and severed the decedent's bladder, with the result that the patient eventually died.

22. This action is based upon a claim that the doctor undertook to, and did perform a surgical operation on the plaintiff, a woman, and the complaint in the action is so absolutely general that one would hardly know whether it was an extraction of a tooth or the removal of an appendix complained of. The report of the hospital where the woman was operated on shows that at the time of the operation she was suffering from a ruptured ectopic pregnancy.

23. This case has gone no further than the threat, and while your counsel has written to the doctor that it was necessary for him to apply for defence, no such application has been made. The case refers to a piece of gauze found in a wound after operation. Who put it there, no one seems to know. Not the defendant.

24. In this case your counsel has been called in consultation and for advice. It is claimed that the defendant was especially called in to operate on a lacerated perineum, and that while he was engaged in doing that it is claimed he also removed an ovary and tube and the appendix, and that he also anchored the uterus of the plaintiff, and that for these abdominal operations he had no authority and was therefore guilty of assault. The claim is for \$25,000, and your counsel will be invited to take part in the trial.

25. This action was brought to recover for what the plaintiff claims was negligence in treating a wrist, which she contended she had broken. The doctor advised X-ray examination, which was neglected, and after several weeks or months the patient again visited the doctor and he found her suffering from some rheumatic condition about this wrist, but the patient has no desire, evidently, to go on with the case.

26. This action was based upon a claim made by the patient that, having broken off a needle in her hand, she called on the defendant to locate the needle. The defendant insisted that it was necessary, in order to find it, to take an X-ray picture, which was done. The needle was found. In the midst of the operation, under a local anæsthetic, the patient suddenly snatched away the rubber bandage and left the doctor's office, saying she was going home. The defendant is a very well-known, careful operator, and the action of the patient has rendered any chance of her recovery absolutely nil.

27. The basis of this action is that the doctor having written a prescription for a two per cent. solution of nitrate of silver, was given by the parents and furnished by the druggist with a twenty per cent. solution to be used on a new-born infant's eye at birth. As this case has not yet been disposed of, it will not be discussed.

28. This action was begun by simply serving a summons with notice on the defendant. A notice of appearance was served by me, but no complaint has ever been served. I have written two letters in reference to this case, but the plaintiff has never served a complaint, and for that reason I prefer not to discuss the facts in this case in any way.

29. In this case the plaintiff applied for treatment at a skin and cancer hospital, as it appears he had done several times before, and that there was assigned to him for treatment a doctor who is the defendant in this action. The plaintiff claims that in removing bandages around the plaintiff's thigh and around his head, the doctor was careless and negligent, and that by reason of his acts new and other wounds were opened which bled and caused the patient to suffer unnecessarily, and also required him to expend large sums of money to be cured of the physical ailments caused by the negligence of the defendant.

30. This action was begun by a doctor bringing suit for his bill. The suit was based upon employment to set the broken jaw of a little child who had been run over in the street by a wagon, and presented one of the most difficult situations that your counsel has been called upon to observe. The result was perfect, although the jaw was broken into three parts. This case was tried in the Municipal Court without a jury, and the judge certified the case back to a jury for trial because he was unable to fix the amount of the doctor's bill. The case finally resulted in a judgment for the doctor's bill being consented to, and the case ended.

31. This action was begun because this defendant also wanted to collect his bill in one of the inferior courts, and the patient thereupon set up, as a defence the malpractice of the doctor. The claim made in defence of the doctor's bill was that he neglected to properly set a fracture of the wrist.

32. In June of last year application was made in a personal letter to your counsel accompanying a letter from a lawyer threatening suit. The practice criticised by the patient evidently was in connection with a fracture of the elbow. It seemed that the doctor's care was the best possible, and all your counsel was required to do was to suggest a letter which was written to the lawyer, notifying him that he and his client would be held personally responsible for any unwarranted attack upon the doctor's professional conduct. Up to date that has ended the proposed litigation.

33. This case was practically reached for trial, but on account of your counsel's engagements was marked "off the calendar," and has never been restored. The basis of the complaint is that the infant plaintiff had disintegrated tonsils and adenoids, and that an operation was performed, and the plaintiff claims that gauze or other material was left in the infant's throat, and that this gauze got into the infant's air passages and after two or three months was coughed out. Your counsel believes that he never has had presented to him a more absurd contention.

34. This action is for \$50,000, and it is claimed that an examination made by "an expert pleuroscopic examiner" caused a burn. It transpires that the operator in this case used every known appliance to prevent and avoid this very thing, and if any burn occurred it was certainly no fault of his.

35. The doctor in this case was called to treat a lacerated wound about the right elbow joint, and numerous contusions of the body, the patient having been knocked down in the street by a wagon. The doctor told her to call him or her own family physician the following day. He never saw the patient afterwards, and the threat of a suit seems to have ended there, as this patient has done nothing since February of last year.

36. Your counsel has been called in this case to assist the attorneys for one of the insurance companies. The patient was taken to one of the hospitals in

Brooklyn, and it is claimed that while the defendant was giving an anæsthetic a drop of the anæsthetic was allowed to fall into the patient's eye, and that he received an injury to the eye. This case is at issue, but has not yet been tried. Just what part your counsel is expected to take in this case he has not yet been advised either by the lawyer for the insurance company or by the doctor himself.

37. In this action the patient claims that he fell and broke the scapula, and that he was then taken to a hospital and put into one of the public wards, and that then the defendant took charge of the patient and undertook to set his shoulder, but that in doing so he put on such a heavy plaster cast that the patient claims that his shoulder was injured by pressure on certain nerves, muscles and other portions of the plaintiff's shoulder. This case is in charge of a local attorney, and your counsel has been asked to take part in the defence of the case when tried. Application for defence has been made in the regular way.

38. It is claimed in this case that the doctor was consulted by a young woman who was suffering from certain disorders and feeling symptoms of pregnancy. She claims that the doctor called on her from time to time, and finally changed his opinion of the condition and prescribed different medicines, and that the medicines prescribed made her ill. She claims that the doctor made use of crude and unsanitary means in making his diagnosis, and as a result she was caused to give premature birth to a child.

39. This action is one for failure to properly adjust a fracture of the radius, which the plaintiff claims occurred about two and one-half inches above the wrist joint. It is claimed that the defendant failed and neglected to reduce the fracture or to put the fractured bones in place, and that by reason of his negligence and improper treatment the plaintiff's arm failed to heal, and that the healing process was hindered so that he was unable for an unnecessarily long time to perform his ordinary labor and service. He also sues for unnecessary added expenditure of money in attempting to be cured of the result of the doctor's neglect.

40. This action first appeared in a letter addressed to the editor of the State JOURNAL. No action has been brought, but apparently the case is one involving a fracture of the femur. The ordinary, proper and approved splintage was applied, followed by a plaster cast with weight and extensions. This letter to the editor was the result of a letter received by the doctor from a lawyer, but as nothing has been heard of the case since last August, it is fair to assume that the enthusiasm of the patient to collect has waned.

41. This case is one involving confinement. The plaintiff claims that there was unnecessary injury following the delivery of the child.

42. In this case it is claimed that the doctor, incident to an attempt to perform a curettage, perforated the uterine wall and the intestines. It appears that the woman afterwards was taken to a hospital, but died. The estate sues for \$25,000 for the loss of her life.

43. This case represents an action brought by a father of a child who was brought to one of the large hospitals, suffering with swollen glands in the neck and appeared to have some contagious disease. The father was told that the child must be taken out of the institution because of endangering the lives of hundreds of other children there. It transpired that the child was taken to a hospital for contagious diseases and there received antitoxin for diphtheria. The child died.

44. In this case the doctor was sued because it is claimed that he was negligent in taking care of a case of appendicitis. The original attendant called another doctor in consultation, and an immediate operation was advised, and a gangrenous appendix was removed and drainage left in the incision. The patient returned home after two weeks. After the patient had arrived

home he developed some abdominal pains, and it was claimed that these pains were symptoms of renal colic. A local attorney represents the defendant. Your counsel is only acting as adviser, to take any part in the case that the doctor wishes.

45. An action was brought in April last year against this defendant, and a notice of appearance demanding a copy of the complaint was promptly served. No complaint has yet been received. The only information that could be secured was that the action had something to do with the non-union of a fractured bone. The case may or may not develop into anything. No formal application for defence has yet been made by the doctor.

46. This action was begun by the service of a summons only. Immediately after that was served, a notice of appearance was served by your counsel, and when the time to serve a complaint had about expired, an extension of time was given, but no complaint has ever been served and the time has passed to serve one. No proceeding will be taken to dismiss this action for the present, and the case cannot very well now be discussed.

47. In this action your counsel is expected to take an active part in the trial, but is not the attorney of record. The action was begun in one county and will end in another. A local attorney who has charge of the suit is looking after the details of the case, which involves an operation for fistula, which it is claimed was improperly done.

48. The plaintiff in this action charges that while at work on a scaffold in erecting a building he fell and broke and dislocated his right foot. He claims that he employed the defendant to set and treat the bones of his foot, but that the defendant was negligent in that he neglected to properly support the foot with landages and splints, and that by reason of his negligence plaintiff's foot became inflamed and swollen, so much so that his health was injured and the use of his ankle and foot impaired.

49. This case had its inception in the doctor's desire to collect his fee. No sooner had the doctor begun his action to collect the fee for \$100 than a suit was threatened for malpractice. The matter was in the hands of a local attorney, but after long correspondence the matter was adjusted satisfactorily.

50. In this action plaintiff claimed that the doctor was careless in the delivery of a child, wherein it transpired that perineal tears occurred, which were promptly sewed up. This action was begun in one of the inferior courts, but was finally abandoned and discontinued.

51. This action was begun against a physician, wherein it was claimed that he was negligent in that he failed to give antitoxin in a case where a child had had his finger injured. The case was on the calendar for trial, and the attorney, in presenting certain affidavits to the court got himself and his client in rather a precarious position, and had to abandon the case. The action had no merit, in any event.

52. This action had for its basis an injury to the little finger of the left hand of the patient, and the claim was that the defendant failed to make a proper examination and failed to properly look after it, so that the use of the finger was lost, the joints about it became stiff, and that the patient has been permanently injured.

53. This case was an especially interesting one, in that your counsel was not called into the case until almost over night, and went to act as adviser and counsel in the case. Upon arrival at the scene of trial, the attorney for the defendant, who was also the attorney for an insurance company, requested that your counsel take charge of the case on the eve of trial. The exhibit in the case was rather unfortunate, but the case was tried and won.

54. In this case it was claimed that the defendant did not properly take care of a new-born infant in respect

to the administration of prophylactic measures applied to the eyes. As a matter of fact, prophylactic measures were used, but in spite of their use the child lost its sight by reason of infection.

55. This case was one of special interest, because it presented some very novel and very interesting scientific facts. The patient in the case first complained of a pain in his back, subsequently developed a large abscess, which connected with the tubercular condition of the spine, and incident to the draining of this large abscess the plaintiff contended that there had been left in the abscess rubber tubes. Sinuses formed around this large abscess, and in one of these sinuses a rubber tube was found by the defendant and removed. The question presented is one as to whether or not the patient was actually injured at all, or, on the contrary, benefitted by the presence of these tubes.

Your counsel is glad to announce the complete formation of the new County Society in the County of Bronx. Incident to the formation of this new society, physicians who were already enrolled in the County of New York have had some considerable trouble in having the County Clerk of Bronx County accept their registration. So much trouble has been encountered, that your counsel during the year presented to one Senator from the Bronx a bill to correct it. He did not secure its passage. During the coming session of the Legislature a bill will be passed entitling these doctors, on the payment of a small amount, to have their registration transferred from the present County of New York to the present County of Bronx.

It again affords me no little amount of satisfaction to express my appreciation to the various members of the society in the various counties, who have come forward upon my call to assist brother practitioners, whether acquaintances of theirs or not. Real personal sacrifices have been made, not only of time, but through the loss of time, money; but there has been no holding back, but always the uniform readiness to come to the assistance of the brother practitioner who is attacked.

It may be noted that in cases Nos. 16, 32 and 40, no action has yet been brought.

While the number of cases brought this year has been a few less than last year, I feel certain that the number may be largely diminished if the importance of abandoning their insurance and relying upon their own resources could be sufficiently impressed upon the minds of the various members. The inquiry being made of the doctor who is attacked, as to what the name of his insurance company is, is of frequent occurrence. It is most unfortunate that this situation could not be cured, and the House of Delegates ought, for the protection of the professional standing of its members, to take some affirmative action.

All of which is respectfully submitted,

JAMES TAYLOR LEWIS,  
*Counsel.*

December 31, 1914.

## REPORT OF THE COUNCILOR OF THE FIRST DISTRICT BRANCH.

*To the House of Delegates:*

The Annual Meeting of the First District Branch was held at the Hotel Martinique, New York City, on Thursday, October 8, 1914.

Dr. James E. Sadlier, of Dutchess, was elected President. The other officers chosen were Dr. Floyd M. Crandall, of New York, Vice-President; Dr. Charles E. Denison, of New York, Secretary; Dr. George A. Leitner, of Piermont, Treasurer.

After the regular business meeting, at which the amended by-laws were presented, the following scientific program was given:

President's address: "Late Manifestation of Inherited Syphilis of the Nervous System," Henry Lyle Winter, M.D., Cornwall.

"Obscure Causes of Disease," W. Stanton Gleason, M.D., Newburgh.

"Toxic Diseases of the Nervous System," Edward D. Fisher, M.D., New York.

"Practical Clinical Demonstration of Early Diagnosis of Pulmonary Tuberculosis" (with presentation of patients), S. Adolphus Knopf, M.D., New York.

"Treatment of Malignancy by Physical Methods with and without Surgery," Arthur F. Holding, M.D., New York.

Discussion opened by George M. MacKee, M.D., New York.

"Presentation of Dermatologic and Syphilitic Cases of Unusual Interest," Mihran B. Parounagian, M.D., New York.

"Puerperal Pyemia" (report of a case), Edward C. Thompson, M.D., Newburgh.

Dr. Grover W. Wende, President of the State Society, was present and spoke on the work of the Society.

Discussion of the several papers was participated in by the members present.

As will be noted, two of the papers on the program included the presentation of patients. The difficulty of presenting clinical material at such a meeting has heretofore prevented the addition of this valuable adjunct to the sessions of the First District Branch. The attempt was, therefore, somewhat in the nature of an experiment, and I am glad to be able to report its complete success.

Dr. Parounagian, who showed a large number of interesting cases, was given a vote of thanks by the Society for the presentation of his patients.

It is my opinion that the introduction of some clinical features into the program of the branch meetings will increase their interest. An excellent luncheon was served, which was enjoyed by all present.

I wish to express my thanks to the Committee on Arrangements, Drs. Walter Lester Carr, Arthur F. Chase, Floyd M. Crandall, Frank Van Fleet, and Samuel McCullagh. The activity of this Committee contributed largely to the success of the meeting.

Respectfully submitted,  
HENRY LYLE WINTER, *President.*

December 31, 1914.

## REPORT OF THE COUNCILOR OF THE SECOND DISTRICT BRANCH.

*To the House of Delegates:*

Having been elected President of the Second District Branch of your honorable Society, at the annual meeting held in Brooklyn, November 24, 1913, I became a member of the Council at the close of the annual meeting of the Medical Society of the State of New York last April, and, as such, it becomes my duty and privilege, under Section 5 of Chapter 6 of the by-laws of your Society, "to give an account of my stewardship," in other words, to make a report to you at this time.

The duties of the office have not been onerous, but pleasant, as in the discharge of those duties I have formed many pleasant acquaintances and learned something of the importance of the work being done by the Medical Society of the State of New York and its branches and auxiliaries.

It is expected of your Councilor that he shall attend the meetings of the County Societies of the several counties of the district at least once in each year. As the Suffolk County Society meets semi-annually, there are but two opportunities for making this official visit, and, unfortunately, your Councilor was prevented from meeting the members of the Suffolk County Society at either of their meetings in 1914, owing to circumstances beyond his control. He had expected to attend the December meeting of the Kings County Society, but again circumstances intervened which made it impossible for him to do so. He intends, however, to meet the Kings County brethren before the end of the year.

The annual meeting of the Second District Branch was held at Mineola on November 27, the branch being the guest of the Queens-Nassau Medical Society. The occasion was very pleasant and the interest shown was very gratifying and encouraging. A copy of the program was as follows:

President's address, James S. Cooley, M.D., Mineola.

"The Changes Which are Apparently Indicated in Our System of Private Medical Practice, Judged from the Viewpoint of the Health Officer, Educator and Sociologist," Walter S. Cornell, M.D., Director of Medical Inspection of Public Schools, Philadelphia, Pa.

"Medical Inspection of Schools—Interlocking Benefits Thereof," Charles A. Steurer, M.D., Medical Inspector of Schools, Port Washington, L. I.

"The Care of the Abdomen in Infancy and Early Childhood," Eliza Mosher, M.D., Brooklyn.

Discussion opened by Frank Overton, M.D., Patchoque.

Perhaps the most important matter that came under the consideration of your Councilor during the year was the preparation, by a special committee, of a schedule of fees for medical and surgical attendance and services, under the Workmen's Compensation Act. This schedule has been agreed to, practically, by all the insurance companies interested, and has been accepted

by the Commission to which has been committed the administration of this law as a basis of claims made under the act referred to.

Your Councilor would hereby extend his sincere thanks and appreciation to the officers of the State Society and to all others who so willingly contributed to the success of the annual meeting, and for all other courtesies extended to him, in the sincere hope that the coming year may prove to be one of progress and prosperity to the profession, despite the dark clouds of desolation, distress and death which hang like a pall over all the fair lands of Europe.

Respectfully submitted,

JAMES S. COOLEY, *President.*

December 31, 1914.

## REPORT OF THE COUNCILOR OF THE THIRD DISTRICT BRANCH.

*To the House of Delegates:*

The annual meeting of the Third District Branch was held in Albany, Tuesday, September 15, 1914. The date was fixed a month earlier than usual. In consultation with some of the members residing in Sullivan and Schoharie Counties an earlier date than usual was suggested, as the weather would then be good and they could readily come by auto.

The morning sessions of the meetings were held at the Albany City Hospital. Clinics, surgical and medical, were held in large numbers and were very interesting and fairly well attended.

A delightful lunch was served at the Hospital, the Medical Society of the County of Albany being the hosts.

The afternoon session was held in the auditorium of the Albany Medical College, the authorities having placed it at the disposal of the branch. The meeting was well attended, with a very interesting program, which was fully discussed.

The date of the meeting clashed with the annual Sanitary Conference of the Health Department of the State, which met at Saratoga on the 15th. I hope in the future it may be arranged so they may not meet at the same time.

It has been my privilege and good fortune to attend the meetings of all the constituent societies but one. Everywhere the meetings were well attended and had unusually good programs, and I was delightfully entertained. I feel under many obligations to all of them for the courtesies extended.

Respectfully submitted,

ROBERT SELDEN, *President.*

December 31, 1914.



**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 Gloversville, October 13, 1914, with an attendance of more than one hundred. A program, consisting of papers and illustrated lectures, was presented by members of the branch and invited guests from outside the district. A great deal of interest was shown in the meeting.

At the business session officers for the next year were elected as follows: President, Dr. Julius B. Ransom, Dannemora; Vice President, Dr. Lew H. Finch, Amsterdam; Secretary, Dr. Frederic J. Resseguie, Saratoga; Treasurer, Dr. George H. Oliver, Malone. The date and place of the next meeting was not selected.

The President has visited a number of the County Societies of the district during the year, and takes pleasure in reporting them to be in a very flourishing condition. No new societies have been formed and the membership remains about the same.

Respectfully submitted,

GEORGE LENZ, *President.*

December 31, 1914.

**REPORT OF THE COUNCILOR OF THE  
FIFTH DISTRICT BRANCH.**

*To the House of Delegates:*

The Fifth District Branch held its eighth annual meeting at Syracuse, October 1, 1914. This was a joint meeting with the Central and Western New York Medical Society, which met the preceding day. The meeting showed a great amount of enthusiasm and spirit, over one hundred and sixty members being present. Our State President, Dr. Grover Wende, was present and delivered a very timely and able address.

The scientific program covered a morning and an afternoon session with many able papers, with a very free discussion. The Society was especially indebted to Dr. Godfrey R. Pisek of New York City, who read a paper on "Difficult Feeding Cases After the First Year." It was a great disappointment to every member present not to have heard the address of Dr. A. J. Och-sner of Chicago on "Surgery of the Prostate." The doctor, after having addressed the Central and Western New York Society the preceding day, was obliged to give up all engagements on account of a severe infection of his arm, which had just developed and which necessitated a minor operation.

The following officers were elected for the coming year: President, W. D. Garlock, M.D., Little Falls; Vice-President, Harriet M. Doane,

M.D., Fulton; Secretary, George E. Van Doren, M.D., Watertown; Treasurer, George B. Broad, M.D., Syracuse.

Respectfully submitted,

FREDERICK FLAHERTY, *President.*

December 31, 1914.

**REPORT OF THE COUNCILOR OF THE  
SIXTH DISTRICT BRANCH.**

*To the House of Delegates:*

The following is the report of the Sixth District Branch for the past year. The officers of the various county societies, composing the Sixth District Branch, report better attendance at their meetings, more applications for enrollment, and a greater interest in the future of the profession and its advancement by organized work.

The Chenango County Medical Society, at its recent December meeting, appointed a special committee to act with the Legislative Committee of the State Society, so that the County Society may be directly represented at Albany during the coming session of the Legislature. The local Society expects to have at least two men actively engaged in this work, and more if necessary. This Committee is to be on the ground whenever conditions at Albany seem to require their presence. This Committee will aid in the opposition of unjust legislation and will endeavor to keep up the requirements of medical education in the State to a proper standard.

I am now in correspondence with the officers of the various County Societies in the district to have them adopt the same procedure and be represented in person by committees of their own membership at Albany.

The report of the Sixth District Branch meeting, held at Norwich, October 6 last, was made by Dr. R. Paul Higgins of Cortland, Secretary. The attendance at this meeting was very flattering, 25 per cent. of the total enrollment of the district being in attendance.

Respectfully submitted,

THOMAS F. MANLEY, *President.*

December 31, 1914.

**REPORT OF THE COUNCILOR OF THE  
SEVENTH DISTRICT BRANCH.**

*To the House of Delegates:*

As the by-laws of the State Society require, I am pleased to submit herewith my report as Councilor for the year 1914.

I have been prevented thus far from attending meetings of two of the County Societies in this district owing to either conflicting dates or business matters. It was impossible to visit a third county owing to non-receipt of notice of meeting.

It would facilitate attendance at county meetings on the part of the Councilor if the Secretary of the various County Societies in his respective district would be kind enough to notify the Councilor far enough in advance of the meetings of their respective Societies, so he might prepare his plans to attend such meetings. On the whole, I would say that the profession in the Seventh District are actively interested in progressive medicine. The County Societies visited—those of Wayne, Monroe, Seneca and Livingston—showed an active interest being taken in professional matters. Before the 1915 meeting of the State Society I hope to be able to visit the counties which have not been visited thus far this year.

The annual meeting of the District Branch was held at the Newark State Custodial Asylum at Newark, N. Y., the attendance being good and the program interesting. The next annual meeting is to be held at Geneva, N. Y.

Respectfully submitted,

WILLIAM T. SHANAHAN, *President.*

December 31, 1914.

#### REPORT OF THE COUNCILOR OF THE EIGHTH DISTRICT BRANCH.

*To the House of Delegates:*

During the past year meetings in the Counties of Erie, Cattaraugus, Chautauqua, Wyoming, Allegany, Niagara, Orleans and Genesee were held at the usual stated times. The annual meeting of the Eighth District Branch was held at Niagara Falls, September 23 and 24. The weather was unpropitious, so the attendance was smaller than was expected, but the quality of the papers made up for the small attendance.

On the evening of the 23rd a banquet was held at the Hotel Kaltenbach. On the 24th the meeting was addressed by the President of the State Society, Dr. Grover W. Wende, in his usual felicitous manner. A motion to change the by-laws so as to make them uniform in every branch was made and laid on the table for action next meeting.

The following officers were elected to take office at the beginning of the next medical year, directly following the annual meeting of the State Medical Society: President, Dr. Carl Leo-Wolf, Buffalo; First Vice-President, Dr. Albert T. Lytle, Buffalo; Second Vice-President, Dr. Edmund Torrey, Olean; Secretary, Dr. E. A. Sharp, Buffalo; Treasurer, Dr. Charles A. Wall, Buffalo.

In sending in this, my final report, I wish to thank those earnest workers, my fellow officers, to whom no effort was too great nor sacrifice too exacting if the welfare of the Society was at

stake. A loyal response was always given when a demand for service was made, not only by officers of the branch, but also by officers of the county societies. Erie, Chautauqua and Orleans deserve to be singled out for special praise. I shall not soon forget the meeting in Jamestown, when practically every member from Chautauqua was present, to say nothing of a delegation of twenty from Warren, Pa.

I trust my successor, Dr. Leo-Wolf, will have great success during his administration and that he will be able to build up Niagara County Society, of which he is a member, to the position that its medical population entitles it.

Respectfully submitted,

ARTHUR G. BENNETT, *President.*

December 31, 1914.

#### CHAPTER 295, LAWS OF 1915.

AN ACT TO AMEND THE JUDICIARY LAW, IN RELATION TO THE APPOINTMENT OF EXAMINING PHYSICIANS IN CRIMINAL OR SPECIAL PROCEEDINGS.

*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

Section 1. Chapter thirty-five of the laws of nineteen hundred and nine, entitled "An act in relation to the administration of justice, constituting chapter thirty of the consolidated laws," is hereby amended by inserting therein a new section after section thirty thereof, to be section thirty-one, to read as follows:

§ 31. *Examining physicians. In a criminal action or proceeding or in a special proceeding instituted by the state writ of habeas corpus or certiorari to inquire into the cause of detention, in which the soundness of mind of a person is in issue, the court in which or the judge or justice before whom the action or special proceeding is pending may appoint not more than three disinterested competent physicians to examine such person as to his soundness of mind at the time of the examination. Any such examining physician may be sworn as a witness at the instance of any party to the action or proceeding. The compensation of such examining physician for making such examination and testifying, when certified by the presiding judge or justice of the court or judge or justice making the appointment, shall be paid out of any funds available for the payment of and in the same manner as other court expenses.*

§ 2. This act shall take effect immediately.

EXPLANATION—Matter in italics is new.

### MEETING OF THE COUNCIL.

A regular meeting of the Council of the Medical Society of the State of New York was held at the Sixty-fifth Infantry Armory, Buffalo, April 29, 1915, at 4.30 P. M. Dr. W. Stanton Gleason, President, in the chair. Dr. Wisner R. Townsend, Secretary.

The meeting was called to order by the President, and on roll call the following answered to their names: Drs. W. Stanton Gleason, Montgomery E. Leary, Wisner R. Townsend, James F. Rooney, Albert W. Ferris, Joshua M. Van Cott, James E. Sadlier, James S. Cooley, Julius B. Ransom, William D. Garlock, Thomas F. Manley, William T. Shanahan, Carl G. Leo-Wolf.

The minutes of the last meeting were approved as printed in the NEW YORK STATE JOURNAL OF MEDICINE for January, 1915, Volume 15, page 35.

Moved, seconded and carried that Dr. Joshua M. Van Cott, of Brooklyn, be appointed Chairman of the Section on Public Health, Hygiene and Sanitation.

Moved, seconded and carried that Dr. Albert E. Sellenings, of New York, be appointed Assistant Secretary.

Moved, seconded and carried that Dr. Harlow Brooks, of New York, be appointed Assistant Treasurer.

Moved, seconded and carried that the resignation of Dr. Charles H. Richardson as Delegate to the 1915 meeting of the American Medical Association be accepted.

Moved, seconded and carried that Dr. Walter W. Strang, of New York, be appointed Delegate for 1915 to the meeting of the American Medical Association in the place of Dr. Richardson resigned.

Moved, seconded and carried that a Committee on Finance be appointed to consist of Drs. Alexander Lambert, Frank Van Fleet and Henry L. Winter.

Moved, seconded and carried that the Committee on Finance authorize such expenditures as it considers advisable, and that the Officers, Chairman and members of Committees incur no expense on behalf of the Society, except railroad fares, without the approval of the Committee.

Moved, seconded and carried that a Committee of three to pass upon County By-Laws be appointed to consist of Drs. James E. Sadlier, William T. Shanahan and Wisner R. Townsend.

Moved, seconded and carried that the following amendments to the By-Laws of the Tompkins County Medical Society be approved.

Chapter IX, Sec. 2. Strike out the words, "2d of December" and substitute therefore the words, "the second Tuesday of December."

The amendment to Chapter V, was referred to the Committee on By-Laws. Sec. 3. Strike out the words, "at regular meeting" and substitute therefore the words, "at the stated meeting preceding the annual meeting."

The list of section officers elected at the section meetings was announced by the Secretary:

Medicine—Dr. John L. Heffron, Chairman, Syracuse; Dr. John M. Swan, Secretary, Rochester.

Pediatrics—Dr. DeWitt H. Sherman, Chairman, Buffalo; Dr. Edward J. Wynkoop, Secretary, Syracuse.

Surgery—Dr. Harry R. Trick, Chairman, Buffalo; Dr. George S. Towne, Secretary, Saratoga.

Obstetrics and Gynecology—Dr. George G. Ward, Jr., Chairman, New York; Dr. George B. Broad, Secretary, Syracuse.

Eye, Ear, Nose and Throat—Dr. Percy Fridenberg, Chairman, New York; Dr. Thomas H. Farrell, Secretary, Utica.

Moved, seconded and carried that the contract with Mr. Lewis as Counsel be renewed for the ensuing year on the same terms as last year.

Moved, seconded and carried that Mr. A. H. Wicks be appointed auditor for the coming year at a salary of \$200.

Moved, seconded and carried that Drs. Arthur A. Jones, of Buffalo, and Charles Stover, of Amsterdam, be approved as members of the Committee on Public Health.

Moved, seconded and carried that Drs. Floyd M. Crandall, New York; Alexander Lambert, New York; John C. MacEvitt, Brooklyn; Victor A. Robertson, Brooklyn; Samuel W. S. Toms, Nyack, be reappointed to the Committee on Publication of the Council.

Moved, seconded and carried that Dr. John C. MacEvitt, Brooklyn, be appointed Editor for the ensuing year.

Moved, seconded and carried that on and after July 1, 1915, no member of the Medical Society of the State of New York shall receive the Directory, the NEW YORK STATE JOURNAL OF MEDICINE, nor be entitled to malpractice defense, until his county dues and state assessment have been paid.

Moved, seconded and carried that in order to encourage increase in membership for the year 1915, all members who are elected between October 1, 1915, and December 31, 1915, and who shall pay during that period their state assessment, may have the same credited to 1916, provided that they request it. All whose assessments are so credited shall be entitled to malpractice defense for 1915, but shall not be entitled to receive the Directory or the Journal for 1915. State assessments so credited shall be immediately forwarded by the County Treasurer to the State Treasurer.

Dr. Wisner R. Townsend, Chairman of the Committee appointed by the Council to present to the Regents the resolution passed by the Council December 5, 1914, reported that the committee appeared before the Regents in Albany, and a bill was later introduced into the Legislature by Senator Whitney. This bill was not at all satisfactory to the committee and after being twice amended was recommitted to the Committee on Public Health of the Senate and was never reported out of committee. Moved, seconded and carried that the report be accepted, and that the Committee on Legislation be asked to report, at a subsequent meeting, as to future action on the subject.

Moved, seconded and carried that the Council of the Medical Society of the State of New York assembled in Buffalo, April 29, 1915, desires to express its sincere gratitude and appreciation to the Medical Profession of Buffalo, who under the guidance of the Committee on Arrangements, made possible the most successful meeting in the history of the organization.

To the Mayor, President of the Chamber of Commerce and the Citizens it gratefully acknowledges the interest and assistance given the Medical Profession in so ably seconding their efforts in making so complete and successful the 109th annual meeting. The Council feels that it is impossible to give just praise to each individually, but desires to place on record its sincere appreciation of the untiring zeal, businesslike methods and successful work of the Chairman of the Committee on Arrangements, Dr. Albert T. Lytle, of Buffalo.

Moved, seconded and carried that the Medical Society of the State of New York appreciates the value of the courtesy extended by the Colonel commanding the Sixty-fifth Infantry, N. G., N. Y., in permitting the use of the superbly equipped armory for the purpose of holding the 109th annual meeting of the Society therein, April 27-29, 1915; therefore,

*Be It Resolved*, That the Council of the Medical Society of the State of New York desires to express to Colonel Charles E. P. Babcock its appreciation by a unanimous vote of thanks.

Moved, seconded and carried that the annual meeting in Saratoga Springs be held on May 16, 1916.

Moved, seconded and carried that the Committee on Arrangements make a report at the May meeting of the Council.

There being no further business the minutes were approved as read, and the meeting adjourned.

WISNER R. TOWNSEND,  
Secretary.

## 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.

**PYELOGRAPHY (Pyelo-Ureterography), A STUDY OF THE NORMAL AND PATHOLOGIC ANATOMY OF THE RENAL PELVIS AND URETER.** By WILLIAM F. BRAASCH, M.D., Mayo Clinic, Rochester, Minn. Octavo volume of 323 pages, containing 296 pyelograms. Philadelphia and London. W. B. Saunders Company, 1915. Cloth, \$5.00 net.

**THE CANCER PROBLEM.** By WILLIAM SEAMAN BAINBRIDGE, A.M., Sc.D., M.D., Professor of Surgery, New York Polyclinic Medical School and Hospital; Surgeon and Secretary of Committee of Scientific Research, New York Skin and Cancer Hospital; Consulting Surgeon, Manhattan State Hospital, Ward's Island; Honorary President, First International Congress for the Study of Tumors and Cancers, Heidelberg, 1906. New York. The Macmillan Co., 1914.

**FEDERAL NARCOTIC RECORD BOOK.** Published by The Abbott Laboratories (The Abbott Alkaloidal Company), Chicago, Seattle, San Francisco, Los Angeles, New York. Price, 25 cents.

**INFECTION AND IMMUNITY.** A Text-book of Immunology and Serology. For Students and Practitioners. By CHARLES E. SIMON, B.A., M.D., Professor of Clinical Pathology and Experimental Medicine, College of Physicians and Surgeons, Baltimore; Pathologist to the Union Protestant Infirmary, the Women's Hospital of Maryland and the Mercy Hospital, Baltimore. Third Edition, enlarged and thoroughly revised. Octavo, 351 pages, illustrated. Cloth, \$3.25 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

**URINARY ANALYSIS AND DIAGNOSIS by Microscopical and Chemical Examination.** By LOUIS HEITZMANN, M.D., New York City. Third Revised and Enlarged Edition, with one hundred and thirty-one illustrations, mostly original. William Wood & Company, New York, 1915.

**TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.** Third Series, Volume XXXVI. Philadelphia, 1914.

**A REFERENCE BOOK ON THE FEDERAL NARCOTIC LAW (Harrison Act), for Physicians, Druggists, Dentists and Veterinarians.** By ALBERT DEAN CURRIER and DANIEL FORBES. Copies may be obtained from the Secretary of the National Association of Retail Druggists, at 122 So. Michigan Avenue, Chicago, for 25 cents per copy.

## Book Reviews

**SOLIDIFIED CARBON-DIOXIDE.** By RALPH BERNSTEIN, M.D., Clinical Instructor in Skin Diseases, Hahnemann Medical College, Philadelphia.

This book of 90 odd pages is a compilation of what has appeared in the literature regarding the therapeutic use of CO<sub>2</sub>.

The volume is divided into seven parts, the first six deals with the history of the therapeutic use, the process of compressing the gas, and its application to the diseased surfaces.

Part seven is given to the consideration of the diseases that can be treated by solidified carbon dioxide. It is here that the author reveals himself to be an enthusiast, for who but an enthusiast would think of recommending the use of CO<sub>2</sub> snow for the treatment of acne, psoriasis, pagets disease or lichen planus?

Although this work is an unnecessary multiplication of books, it might serve to enlighten any one who might be interested in the subject, for in a very concise manner the method of application, the apparatus for making the solidified stick, and even the name and address of the manufacturers of the apparatus are given, who, by the way, are also the publishers of the book.

**WORRY AND NERVOUSNESS; or, The Science of Self-Mastery.** By WILLIAMS S. SADLER, M.D., Professor Therapeutics, Post-Graduate Medical School, Chicago; Director Chicago Institute of Physiologic Therapeutics. Illustrated. Price, \$1.50 net. A. C. McClurg & Co., Chicago, Ill., 1914.

This is a rather voluminous work on psychotherapy, intended to contribute something definite to the emancipation of nervous sufferers from the tyranny of "nerves," the slavery of "worry," and the thralldom of "fear." It deals with the practical management of the various neuroses, including a large group of "borderland" ailments. The first twenty chapters are devoted to a study of the various nervous states, and the remaining eighteen to their treatment. In general, the book is to be commended, though one disagrees as to the wisdom of some of the details of practical management. They are doubtless efficacious as administered by the author, the element of faith discounting apparently illy-advised methods. We do not mean to be understood, however, as detracting from the soundness of most of the steps advised. But it seems to us that such works should not be placed in the hands of neurasthenics, who would certainly find much in it that would tend to augment their psychical disabilities, despite the wealth of good counsel, yet the author advises close study of his book, one hour every day. And we are not in sympathy with one of the author's practices—having the patient keep a diary of his every abnormal fear and emotional whim. He admits himself that it is highly undesirable to allow the neurasthenic to dwell too freely or frequently upon his melancholy thoughts and morbid feelings. Why, then, an Amiel's diary? We can conceive of nothing better calculated to make morbid fancies indelible, despite accompanying psychotherapy. Who does not recall that most incorrigible of neurasthenics, the gentleman who refers to memoranda when consulting us? Do we not feel instinctively that our efforts will avail naught? A. C. J.

## Deaths

CHARLES C. KNIGHT, M.D., Peekskill, died April 21, 1915.

F. E. McCLELLAN, M.D., Canandaigua, died March, 1915.

JOHN PARSONS, M.D., Kingsbridge, N. Y. City, died April 17, 1915.

W. H. PHILLEO, M.D., Brooklyn, died April 11, 1915.

LORENZO N. PHINNEY, M.D., Wappingers Falls, died April 20, 1915.

E. F. SHEEHAN, M.D., Ossining, died April 25, 1915.

SHERMAN VOORHEES, M.D., Elmira, died May 1, 1915.

ADOLPH WAECHTER, M.D., New York City, died April 11, 1915.

# NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

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## EDITORIAL DEPARTMENT

### "THE AWAKENING OF THE DEPARTMENT OF HEALTH TO AN IMMINENT DANGER."

In the March issue of this JOURNAL of the current year there appeared an editorial on compulsory vaccination which we had every reason to believe represented the opinion of the medical profession of the State of New York with possibly the exception of one or two members. Since its publication there has developed some little criticism of the attitude taken by the JOURNAL in its condemnation of the amendment to the Public Health Law of the State in relation to compulsory vaccination of school children. This criticism assumed a mild form of censure for our not acquiescing in the views held by the State Commissioner of Health who lent his support to the proposed amendments to the then existing laws. Vindication of the JOURNAL's position is entirely unnecessary, but it is pleasing to know that an authoritative source now upholds the views we then expressed.

The weekly Bulletin of the Department of Health, March 15th, contains an editorial entitled "The Mutilated Vaccination Law," which is even

more strongly condemnatory and from which we abstract the following excerpts: "The amended law appears at first glance to give added protection to the City by making compulsory the vaccination of *all children* in New York City." "The old law required that children attending the public schools be vaccinated before admission but made no reference to pupils attending parochial and private schools."

No one can say that this was not a good provision but the Health Department maintains that its value is weakened by the fact that the Department through the co-operation of the parochial school authorities was able to protect by vaccination a majority of the children in attendance at these schools.

"An unfortunate feature of the amended law is the distinction made between cities of the first and second class and all other localities of the State. In the former compulsory vaccination of school children is required, in the latter 'not unless' small-pox exists in any other city or school district or in the vicinity thereof, and the State Commissioner of Health shall verify in writing to the School Authorities in charge of any school or schools in such city or district that small-pox

exists." "While the law thus provides for vaccination in cities of the first and second class as a preventive measure the Legislature for some inscrutable reason is willing to permit and even encourage small-pox epidemics in other parts of the State and makes it possible to lock the stable door after the horse is gone." Inscrutableness is not a synonym for expediency but the latter could have been the cause of the legislature's action. "The situation which is thus created is one we cannot fail to regard with grave misgivings. At least we cannot view with equanimity a law which does not give the school children of neighboring counties a protection equal to that which is vouchsafed in the City of New York. It is certainly dangerous and may prove disastrous. We believe the new State Law to be distinctly weaker than the old law and deplore its adoption. \* \* \* The enactment of the law is all the more regrettable because it was avoidable. To encompass its defeat there was needed only the steadfast opposition of a united medical profession." When was the medical profession ever united? The phrase has become so platitudinous that one's risible inclinations are excited at its utterance.

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#### LEGISLATIVE COMMITTEE'S GOOD WORK.

**D**R. LEWIS K. NEFF, late chairman of the Legislative Committee of the State Society, who by the way could not be induced to accept a reappointment, informs us that he never before, in his efforts to defeat pernicious legislation, received such co-operation and assistance from the Legislative Committees of the County Societies as during the past year. This was especially true of Saratoga, Albany, Erie, Kings, New York, and Jefferson counties.

Of the Anti-vaccination Bill probably the less said the better. The eruptive stage was quite active, but the desquamative, we hope, has left no scars.

The Christian Science Bill was introduced by Mr. Thorn. It was referred to the Committee

on Judiciary. After a third reading it was reported, then recommitted, reported amended, restored to a third reading, and finally referred to a Committee of the Whole, from which it was reported for the vote and defeated. It may be interesting to members of the Society to learn how their representatives voted, in this belief and for other reasons, we publish the following:

Those who voted for the bill:

Messrs. Allen, Ames, Arnsts, Augsbury, Blakely, Bloomfield, Boyd, Coffey, Cotter, Davis, Emden, Everett, Ferry, Fuller, Gibbs, Grant, Graves, Harris, Heim, Hoff, Howard, Judson, Kerrigan, Kincaid, Landon, Law, LeFevre, Macdonald, McElligott, McGarry, McQuiston, McWhinney, N. J. Miller, Montgomery, Nehrbauer, Parker, Polhemus, Preswick, Quick, Seaker, Seelye, Smith, Sullivan, Talmage, Thorn, Whitman.

Those who voted against the bill:

Messrs. Adler, Ahern, Aranow, Bacher, Baxter, Bewley, Bloch, Bourke, Brennan, Buechler, Callahan, Campbell, Chace, Chase, Clobridge, A. A. Comstock, Cotillo, Dewitt, Dobson, Donohue, Dox, Duff, Ellenbogen, Evans, Fertig, Finkelstein, Fish, Flamman, Fuess, Gillen, Goldberg, Grimme, Hinman, Hopkins, Jezewski, Keeney, Kelly, Kenyon, Kiernan, Knight, Kramer, Lord, Machold, Mackey, Magee, Maier, Malone, McArdle, McDonald, McElroy, McNab, Mendelsohn, E. H. Miller, Milligan, Mitchell, Moore, O'Hare, Oliver, Perlman, Powers, Prangen, Pratt, Rice, Ryan, Scharlin, Schimmel, Shapiro, Simpson, Steinberg, Stephens, Stoddard, Stratton, Taylor, Tudor, F. A. Wells, L. H. Wells, G. Wilson, Wiltsie, Wood.

Those who did not vote:

Messrs. Brereton, Burr, Cheney, E. S. Comstock, Conkling, Donovan, Fairbank, Farrell, Feinberg, Freidland, Gillett, Green, LaFrenz, Marasco, McCue, McKeon, Mead, Murphy, Oldfield, Phelan, Shannon, Tallett, Walker, Wheeler, Speaker.

The State Society is appreciative of the action of the members of the Legislature who voted against the adoption of the bill.

Senator Elon R. Brown, from Jefferson County, was opposed to the admission of any of the sects or cults to the field of the practice of medicine by modification of Article VIII of the Public Health Laws.

The Legislative Committee was greatly aided in its work by Harold J. Hinman, Albany County, Frank Aranow, Salvador A. Cotillo, New York County, and Alexander W. Fairbanks, Clinton County.

An Act to Amend the Judiciary Law in Relation to the Appointment of Examiners in Criminal or Special Proceedings; see page 202 of the May issue of JOURNAL, 1915.

This bill became a law and is now in effect. It gives power to the Court in which, or the Judge or Justice before whom the action or special proceeding is pending to appoint not more than three disinterested, competent physicians to give expert testimony. Any such examining physician may be sworn as a witness at the instance of any party to the action or proceeding.

The competency of the physicians to be chosen is left to the judgment of the Court. In referee cases some few physicians seemed to be the favorites of one or more judges and these physicians do not in the minds of their confrères measure up to the standard of requirements always necessary to fulfil the duty assigned to them. Personal favor and party affiliation are influential in these appointments. This does not mean to impute injustice or prejudice to the judiciary, but to human propensities. The Court who will request a County Medical Society (no matter of which school of medicine), to nominate for his information men of recognized ability from whom he may select disinterested and competent physicians will exhibit a strictly judicial discrimination.

If the Society is to be successful in defeating legislation of a character inimical to the practice of medicine in its highest sense, a close union between the Committee on Legislation of the County Societies and the Committee on Legislation of the State Society must exist.

**PRESIDENT W. STANTON GLEASON,  
M.D.**

THE Medical Society of the State of New York has always been particularly fortunate in the selection of its presiding officers. Dr. William Francis Campbell and Dr. Grover W. Wende, late ex-presidents, inaugurated new activities in the executive office by attending the meetings of the County Societies and District Branch Assemblies, thus becoming personally acquainted with the members and *en rapport* with the sentiment regarding the policies of the parent society throughout the different sections of the State. Their interpretations of these views expressed in the annual reports—whether adopted or rejected by the delegates from the constituent societies at the Annual Meetings—were received in such a characteristically broad-minded manner, that it is a matter of the utmost satisfaction to feel that they never lowered, but elevated, the dignity of the position with which they were honored.

That our recently elected president, Dr. W. Stanton Gleason, will most worthily fill the position and exercise a like activity in his own way, is vouched for by all who know him.

Dr. Gleason received his preliminary academic education at Williston Seminary and Amherst College. He was graduated with honors from the Medical Department of the New York University and after one year of hospital work began practice in Newburgh, New York, was twice elected President of the Newburgh Bay Society, President of the Orange County Medical Society and First District Branch, twice First Vice-President of the Medical Society of the State of New York. He is a member of the New York Academy of Medicine, attending physician to St. Luke's Hospital, Newburgh, consulting physician to the Highland Hospital, Matteawan. He has a large consulting and general practice in Orange County, but notwithstanding his busy life, he has always found time to serve on various committees of the State Society with regularity and enthusiasm. His associates speak of him as being a learned, modest and affable gentleman. We bespeak for him a successful regime and the cordial support of every member.

## Original Articles

### A PRELIMINARY REPORT ON THE ROLLIER TREATMENT FOR SO-CALLED SURGICAL TUBERCULOSIS.\*

By JOHN H. PRYOR, M.D.,  
BUFFALO, N. Y.

FOR many years an arbitrary custom has been observed regarding practically all manifestations of tuberculosis not confined to the respiratory tract. Lesions located elsewhere have been grouped and defined often quite unreasonably as belonging to the field of surgical tuberculosis. This habit (for many times it is nothing more), has led to unnecessary operating or other forms of surgical interference with unsatisfactory or disappointing results. It has encouraged narrow views of broad problems, directed attention to local rather than constitutional conditions, and prevented or disregarded the employment of a combination of common sense agencies while directing all efforts toward one isolated fact or often quite inadequate.

As the result of experience and patient observation we are reaching the conclusion that the claim of the operators and an unknown percentage of surgeons, that this vast army of the afflicted belongs alone to them, is more or less of a fallacy. This is particularly and demonstrably true in reference to tuberculosis in its manifold varieties during childhood. There have been altogether too many unsuccessful or deplorable results from radical interference and the purely local attack. A few great surgeons in Europe and the United States have recently begun volunteering the confession that operations, especially in bone and gland tuberculosis, are frequently very discouraging and that other means must be substituted or combined in an enlightened procedure. It seems somewhat obsolete and ridiculous to grasp all that hygiene will offer for those afflicted with pulmonary tuberculosis and neglect it when the sufferer is a child because the disease has attacked the bones or some other part of the anatomy which by a freak of fancy or fashion make it an alleged surgical case. The ward in the city hospital has been the place for one group, including the frail child with low resistance, and the mountains or the woods and the sunshine and the pure open air for the other. The whole expectation of recovery has been placed upon improved general health conditions in one class, and has been almost unheeded or forgotten for the other. The paradoxical routine long pursued and the blind management of the child and its environment could be more glaringly revealed by indulgence in grim humor, but time will not allow of a more extended protest or forceful plea for the tuberculous child. That there is a genuine necessity for surgical relief, and that this if associated with

judgment must be invoked at times when the aid is invaluable, is appreciated, but even in these instances the operation is often not all of the treatment, but a part of it, and should be superseded or followed by other beneficent influences with which nature has blessed us. A growing discontent with routine practice in the treatment of certain forms of tuberculosis which has prevailed in the past has been largely responsible for the introduction and quite widespread use of heliotherapy in Europe.

#### DEVELOPMENT OF HELIOTHERAPY.

The value of heliotherapy was appreciated in ancient times and it has been employed to a limited extent for centuries. Only recently, however, has its use been systematized and consistently introduced and perfected for a special group of those afflicted with disease by the efforts of Poncet, Ollier, Bonnet, Bernard and Rollier. Bonnet and particularly Rollier have developed a definite and scientific method of procedure for sun treatment as applied to cases of tuberculosis. Rollier began experimenting with sun exposure at Leysin in Switzerland in 1903. Beginning with one small building for a few patients, he now has accommodations for over 700. The location is in many ways highly favorable because of altitude 4200 ft., pure air and sunlight. His aim was to increase general resistance, promote deep pigmentation combined with rest and open air treatment. An essential feature of his original work has been to dispense with operative interference and aid nature when necessary with ingenious appliances for fixation, immobilization and extension. Experience has evolved many detailed methods which apparently must be closely followed to attain the success he claims.

#### REPORT OF ROLLIER'S RESULTS.

I have a detailed report of his results and shall quote a few statistics as an illustration of his epochal efforts along new lines of work. During the period from 1905 to 1913 inclusive the number of patients treated at Leysin was 1129, adults 692, children 437; closed tuberculosis treated 804, open tuberculosis treated, spontaneous or post operative 325. Of the closed cases 703 were cured, and of the open cases 242 were cured. Thus Rollier claims more than 80 per cent of recoveries in closed cases and over 70 per cent in open cases. Of the bone cases reported as recovered including coxitis, gonitis, tuberculosis of the foot, shoulder joint, elbow and hand, there were 371. Rollier asserts that 308 of these recoveries were associated with motion of the previously affected joint. These results are most surprising and deserve widespread interest.

#### ROLLIER'S METHOD.

In a general survey of this innovation Rollier seems to have gone far back to nature in a daring manner. The child becomes a barbarian once more, but is controlled and aided by all the

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.



agencies which have been acquired to combat the cause of invasion and its effects. If one will learn the details of the subject and gain more complete information he must consult the monograph entitled, "Die Heliotherapy der Tuberculose" by Dr. A. Rollier of Leysin. It is published by Julius Springer of Berlin. Rollier and his assistants have contributed other pamphlets on phases of his work, and there is now quite a large bibliography on heliotherapy in German and French.

Some of the scientific features involved, such as time of exposure and intensity of sun rays, particularly the ultra violet, and other questions still open for discussion, would have been considered this year at Berne, but the meeting of the Congress on Tuberculosis was postponed until the civilized nations in Europe recover sanity.

Certain steps are very important and can be presented briefly. The insolation is very gradual and slowly completed. The diseased part is kept covered and only exposed to the sun after the coat of tan is existent over the remainder of the body. The patient is made accustomed to open air life and sleeping out of doors for about one week. During this period the temperature, respiration and pulse, and the results of the urine and blood examinations are recorded.

Preparation for the sun bath includes protection from wind or draft. The head is protected by a linen cap or a small awning at the head of the bed, and the eyes shaded by colored glasses or covered with a towel. Then the patient's feet are exposed to the direct sun's rays for five or ten minutes three or four times a day at hour intervals.

*Second Day.*—The feet are insolated ten minutes, the legs from the ankles to knees five minutes three or four times at hour intervals.

*Third Day.*—The feet are insolated fifteen minutes, the legs from the ankles to the 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 three or four times a day 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.*—The exposure of the previously insolated parts is again increased five minutes and the neck and head are exposed five minutes three or four times at hour intervals.

*Seventh Day.*—If all conditions allow the patient is turned on his abdomen and the same course as described repeated.

Gradually the whole body and finally the diseased part is exposed and tanned as deeply as possible. After each insolation the patient is rubbed with spirits of camphor with a rough glove. Ultimately in the course of weeks the

insolation is practiced from four to six hours a day. This treatment is all carried out on the bed to secure convenience and control. Caution must be observed to prevent sun burns and dermatitis. These accidents can be entirely avoided with practice. Reactions may occur if the exposure is pushed too rapidly, and the condition of the individual must be considered particularly if fever is present. We assumed that Rollier had reasons for introducing much detail, and have learned the wisdom of following his directions. When the children are hardened by exposure an air bath is given on cloudy days to maintain it. During the summer the children well tanned can play or walk about most of the day unclad except for a loin cloth. The patient gradually acquires a generous coat of tan, and the skin has a bronze hue, then a copper color and finally the desired chocolate brown appears to signify intensive pigmentation.

Rollier believes that improvement progresses in close relation to the extent of pigmentation, but the manner in which resistance is greatly increased in proportion to the change in the skin is still a matter for further investigation. The aim is to secure recovery with functional use maintained or restored. Those who have visited Leysin report that Rollier's claims are justified and his reports of results are not exaggerated.

In the past a cure of the local disease has often been sought by securing ankylosis or producing a cripple with ankylosis atrophy and loss of motion, and sometimes amputation has been the ultimate result. An operation or repeated operations has constituted the remedy for the removal of dead bone and the effects of caries and particularly to obviate discharge and promote the healing of sinuses. The newer method is to avoid operation, open lesions, secondary infections and disfiguring scars. Rollier aspirates but does not incise the abscess. Nor does he employ any injection into sinuses or fistulæ.

This rather cursory and short description of the mode of application of modern heliotherapy has been presented because there is hardly any literature upon the subject in English.

#### HELIO THERAPY AS INTRODUCED AT THE ADAM HOSPITAL AT PERRYSBURG.

So far as we know the Rollier treatment was first introduced in an extensive way and perfected in this country at the Adam Hospital at Perrysburg, N. Y. The Adam Hospital is a municipal institution for residents of Buffalo only. The site is 1,650 feet above sea level with woods for wind protection. The air is pure, and the scenery remarkably beautiful. There are one hundred and fifty acres of farm land and one hundred and fifty acres of woods.

The Rollier treatment was begun in December, 1913, with a few patients suffering from tuberculosis of the bones or glands. Although not fully equipped the routine has been perfected and the results have warranted extension of the

work. In June new buildings designed for heliotherapy will be finished, and will accommodate 120 children. The special features of the architectural plan will be apparent when the pictures are shown. Enormous veranda space has been supplied to enable open air life day and night with protection from and exposure to the sun. The buildings are one story with no steps to facilitate the moving about of crippled children. The child is in the open air at least 22 hours of the 24. School classes are conducted in the open air by competent teachers, and there is abundant opportunity for nature study, recreation, exercise and play. The child is naked except a cap to protect the head, a loin cloth and slippers, with stockings in the winter. In cases of adenitis when the temperature and pulse are normal they are allowed to play or take walks for certain periods. In the winter they are permitted games such as snow shoeing, tobogganing and skiing. On the day in February when the moving pictures were taken they played unclothed for an hour in the snow. It was a bright sunshiny day; the temperature in the shade was 20 deg. Fahr. above zero. This freedom is only allowed after months of exposure with considerable pigmentation and gradual toughening. When the bone cases are approaching recovery they are also allowed exercise, games and walks.

We have now demonstrated that we can pursue the same methods as Rollier describes without any risk or danger in this climate. The exposed children develop marked resistance to cold or its consequences. In a way they become Indians or "all face." We have learned by two winters trial that, while adults and children, pursuing open air treatment clothed for tuberculosis of the lungs, develop colds, the naked children do not. Last winter there was an epidemic of influenza and some quite severe manifestations were observed. Thus far no child under sun treatment has suffered from any illness except two from chicken-pox. None have had a cold or an influenza. The treatment could be made uncomfortable or cruel. This is entirely unnecessary if properly conducted. The children enjoy it and notify the nurse if the sun appears and beg for playtime in summer or winter.

As the treatment progresses practically every case shows increase of hæmoglobin and red cells. The increase in the lymphocytes is marked. In open lesions with secondary infection or abscess the high leucocyte count falls gradually and soon remains normal.

The devices for fixation and extension are specially designed by Rollier and will be shown on the screen. A child will be presented to illustrate the chocolate brown color desired. We have not had any skin infections. The one great disadvantage in this region is most manifest during two winter months, November and December. There are apt to be periods of a week or several days when there is no sunshine. Then the treatment cannot be pursued or introduced

and time is lost. This period is bridged over by those who have had thorough insolation by giving air baths to the naked skin to preserve toughness and resistance. It seems to be a valuable adjunct when closely watched. Immediately the question will arise, can the effects be obtained in such localities with somewhat unfavorable weather conditions? And we now answer emphatically, yes. In the first place, Switzerland is not a sunny clime and sunshine is uncertain at any time of the year. Thus far I have been unable to obtain accurate information concerning the number of days or hours of sunshine or treatment in Leysin for a given year. It has no such remarkable number of sunshiny days as Colorado, New Mexico or Arizona. These localities would seem to be ideal for heliotherapy, and an extensive trial can be predicted. It has lately been employed in Los Animas, Colorado. The uncertainty of the weather was shown this year by the record of twenty-eight days of sunshine in March at Perrysburg.

We have recently procured the requisite instruments and have established a weather bureau at the hospital to observe and record the days and hours of sunshine, the intensity of the sun's rays, etc. In the near future research and investigation along various lines will be inaugurated. The large number of tubercular dependents cannot be sent far away to a more or less ideal climate, and we are forced for many reasons to care for those seeking relief near home as we have done for the pulmonary cases. The duration of treatment is long, but the results justify resignation and patience.

#### RESULTS AT PERRYSBURG.

We began treatment with three patients.

*No. 1.*—Adenitis of the neck and left axilla originally tubercular and closed, later open with mixed infection. There were three copiously discharging sinuses. This woman had three operations and had tried open air treatment. Her temperature for three months ranged from 102 to 103 in the evening. She had lost 25 pounds and the outlook seemed hopeless. As soon as thorough exposure was procured she began to improve. The sinuses healed, the enlarged glands disappeared and in six months she was discharged recovered with a gain of 30 pounds. There has been no recurrence.

*No. 2.*—Multiple tuberculous nodules of the bones and joints particularly hands, knee and elbows. Three operations for abscesses. Entirely recovered in four months. No recurrence.

*No. 3.*—Spondylitis with marked spasm. Great difficulty in walking, could not wear jacket, double psoas abscess and two discharging sinuses. Tuberculosis of the lung incipient. Afternoon temperature daily 102. Sun treatment and extension by position in bed—no appliances. Completely recovered in eight months. Curvature very slight, has almost disappeared. Gain in weight, 25 pounds.

The majority of the patients admitted for the first six months were suffering from marked cervical adenitis, open and closed, with and without recent or old sinuses or fistulæ. All of the open cases with drainage had followed operation for the removal of glands or incision for the evacuation of pus. With the exception of one case they all recovered with very small hard or imperceptible glands. The exceptional case has shown such remarkable improvement that the pictures revealing the condition before and after treatment will be shown. It was a desperate attempt to save a wreck and the boy is still under observation. This child proves in a striking manner what can be accomplished by natural forces when rationally applied. Five cases of bone tuberculosis left the hospital in spite of argument and persuasion when great improvement had been established but time had not elapsed for complete recovery. The ignorance and unreasonable demands of some parents have been our greatest trial. Of the seven remaining long enough to secure any results two came to the hospital greatly emaciated, bedridden and with daily fever. They had from three to eight discharging fistulæ and had each been operated upon from twice to five times. These two have made unexpected and remarkable improvement. The fistulæ have disappeared or are healing, pain has departed, temperature normal, blood state normal and motion in joints partially restored. The remaining five have practically recovered with full motion. A more detailed description of these cases will be given if desired when the pictures are shown.

At the present time sixty-five patients are undergoing treatment by the Rollier method in strict accordance with his teaching so far as the lesson has been learned. Of these forty-seven are children under fifteen years of age, and eighteen over fifteen years, or adults. Ten of them were sent to the hospital for pulmonary tuberculosis, but there existed other manifestations such as bone or gland involvement, fistula in ano, or neurasthenia, chlorosis or anæmia. It has been found that these complications disappear much more rapidly under sun treatment.

Fifty-seven cases of so-called surgical tuberculosis are classified as follows: Twenty-five with adenitis probably tuberculous open and closed, and twenty-five of bone or joint tuberculosis divided as follows:

*Diseases of Glands.*—Four had been operated upon. In all five were open cases, four have healed.

*Spondylitis.*—Two, one closed and one open upon admission. One has recovered.

*Cases of Hip Joint Tuberculosis.*—Eight. On admission three were open and two firmly ankylosed, four had been operated upon, one fully recovered.

*Tuberculosis of the Knee.*—Four cases, two open and had been operated upon four times each. One has recovered.

*Tuberculosis of the Ankle.*—One admitted after four operations.

*Tuberculosis of the Elbow.*—One, operated upon before admission.

Six cases of disease of bone may not be of tubercular origin, one is probably syphilitic and the others are probably forms of osteo myelitis. These include one of the ribs with multiple foci, one of cranium, humerus, femur and tibia, and three of the tibia. Five of the six had each been operated upon from one to four times. One has recovered.

There are four cases of tubercular peritonitis, two of keratitis and one of renal tuberculosis. Practically all of the sixty-five have been admitted during the last five months, and the length of stay has been too short to warrant a final report. Most of the glandular cases have recovered and are simply under observation. One case of tuberculous keratitis is ready to be discharged. There were frequent recurrences before admission and none since. Three of the cases of tuberculous peritonitis had been operated upon without success and the abdominal sinus was discharging. One has recovered and the opening closed. She has gained 30 pounds. The abdominal exudate has disappeared and the girth of the abdomen has diminished four inches. One has made such improvement that she is about. Drainage has practically ceased and the sinus about closed. Only one has been received without operation and is making rapid improvement. After three weeks treatment the pain is gone and digestion normal, leucocyte count steadily declining, fluid being absorbed. Afternoon temperature now 99, while upon admission it varied from 101½ to 102. The case of renal tuberculosis was associated with an unfavorable constitutional condition. He has gained in weight, pain departed, pus and blood are no longer present in the urine. The outcome cannot be predicted as yet.

Of the bone and joint manifestations we have had scarcely any closed cases until recently. The results are more uncertain and residence at the hospital much more prolonged. It is sincerely to be hoped that more patients will be sent by physicians and surgeons for a trial before pus is evacuated or allowed to escape and secondary infection permitted to complicate the problem. We do not allow abscesses to break, but aspirate to prevent it, and thus far in very serious cases no operations whatever have been performed. The children seem to fear that a probe or an injection may be used or that an operation of some kind is contemplated. Sometimes an assurance that none of these things will occur is important in encouraging contentment and happiness.

In presenting a general statement covering the bone and joint cases it must be remembered that a large percentage of them had failed to recover by other forms of treatment. They are mostly advanced chronic types with loss of motion and

partial or complete loss of function. One case of tuberculosis of the knee and one of the ankle have been admitted for a trial before amputation is decided upon. A few of them have marked atrophy from non-use and the employment of plaster casts or splints. The atrophy certainly does not occur with rest, sun exposure and the appliances recommended by Rollier.

All of the patients at the hospital are improving in various ways which have not been apparent with open air treatment alone. Better nutrition is shown by the changed appearance and increase in weight. Pain gradually vanishes. No anodyne has been necessary after a few days following entrance and then only in one instance. The blood count approaches the normal as the pigmentation is increased and the time of insolation lengthened. Fever gradually subsides and rarely persists more than two or three weeks. The active inflammatory condition becomes distinctly subacute. The amount of discharge may increase for a few days and then steadily becomes less, changes its character to a more serious form and ceases. The dead bone is extruded as a piece in fragments or as sand. The fistulæ close and remain closed, unless more dead bone must be pushed out. Motion returns when otherwise it would be entirely unexpected. There is distinct danger of rash enthusiasm and exaggeration in commenting upon the return of function. The results may be so remarkable in this regard that they justify incredulity until one has seen and been convinced.

Slight experience should lead to cautious prediction, but it seems plain that recovery can be secured in a high percentage of cases if enough time is allowed, and that improvement of a marked character can be or has been obtained to a degree difficult or impossible by other measures. Thus far Rollier's astonishing statements have been proven true where opportunity to observe has been offered. The results developing and the character of improvement can be made much more clear and decisive by the stereopticon views.

#### DIFFICULTY IN DIAGNOSIS.

Now as to the question of diagnosis. It is admittedly open to challenge and debate, and it is of vital importance that the orthopedists should reach some agreement as to the pathology, definition and classification of bone and joint disease ascribed to tuberculosis. Many times it is impossible to determine that a lesion is tuberculous in origin. We can only depend upon the opinion of the physician or surgeon who sends the patient, the appearance, history and characteristics of the diseased part, the roentgenogram, guinea-pig inoculation, examination for bacilli and the von Pirquet test, which proves practically nothing so far as the nature of the diseased focus is concerned. All these methods have been employed.

The chance for error in diagnosis is even

greater when adenitis is considered. The vast proportion of the children sent to the hospital come from a home where the mother, father or both have open pulmonary tuberculosis and there was opportunity for infection. The condition was chronic. In only a few instances has the throat exhibited any trouble as the probable source of infection unless somewhat enlarged tonsils apparently not diseased can be accused.

The guilt or innocence of the tonsil is usually determined by suspicion or assumption, and the verdict is rarely announced before or after removal.

So far as the afflicted individual and real relief are concerned the full importance of an undisputed decision whether a pathological process is tuberculosis in origin or not, is not of paramount significance. It is just as necessary from the patient's standpoint to find help if the distress is due to another cause, and statistics are unintentionally made to an unknown extent misleading. However great or small discrepancies may be, the fact remains that a new plan of therapeutics succeeds when other measures fail partially or completely.

#### CONCLUSION.

The management of patients undergoing the sun treatment during summer and winter will be shown by moving pictures and stereopticon views. Rather startling possibilities in the way of exposure will be revealed, but please bear in mind that the essential aim is to reach scientific ultimate results by procedures, which, while they may be novel, are the outcome of thorough trial and experience. The hard work of mastering the many details and overcoming obstacles has been performed by Dr. Hyde and Dr. LoGrasso. They deserve all the credit for the accomplishment. I have only encouraged and sometimes advised.

Finally a limited opportunity for observation has led to the conclusion that a new and powerful agency has been added to our methods for conquering tuberculosis and that the conflict will be continued with renewed confidence and brighter promise. The crusade should begin with the child along natural sociological and rational lines, and the little ones should have their chance when the flame of life is low where there is sunlight and pure air. We must send more afflicted children to the country where they belong close to nature's generous heart and healing breath, and then summon all the combined forces known by the medical profession to check the devastation of insidious disease and repair its ravages. The difference so often means laughter instead of the cry of pain, smiles instead of tears, happiness instead of the tracery of sorrow fretted into a pinched white face, and, some day, fun and play, the child's rightful heritage, of which it has been so largely robbed by false or vicious environment, misdirected phil-

anthropy, a multitude of incubated fads and some humbugs of civilization.

Rollier is a great pioneer in a rediscovered realm of service to humanity. We have found the path and in the course of time and labor we may be able to speak authoritatively of the wider views revealed along the interesting journey.

#### *Discussion.*

DR. CLARENCE L. HYDE, *Perrysburg*—It has been asked if the exposure of the children in Winter is not cruel, and if the patients would not likely suffer more from the shock than be benefited.

Such questions are natural and legitimate. The treatment would be cruel if the patients were not properly watched. As Dr. Pryor has well shown you, they are not allowed to be chilled or to suffer from cold in any way.

It must be borne in mind that they are well protected from draughts and when taking the cure, attention is given them to prevent chilling of the body, and as soon as there is the slightest indication for it, the body is covered. If there was any undue exposure to the treatment, our subnormal and oftentimes feeble children would be sure to show the effect. We have never observed a patient who was uncomfortably chilled. Visitors have been surprised and have remarked about the warmth of the body surface during the treatment in the Winter.

Tuberculous sinuses and fistulae are not probed, curetted or washed with antiseptics, nor are they covered with the heavy compresses and bandages so commonly used. These wounds are treated only with light and air and protected only by a thin piece of gauze. If the discharge is abundant enough, gauze and cotton is applied at night to catch the discharge.

The use of the sun's rays for their tonic and healing effect is quite rational when combined with rest, pure air and good food, and it is strange that their use has not been more extensively employed.

The heat of the sun produces a hyperaemia. Its effect upon the blood and lymphatics must be important for increased oxidization of the albumens is shown in the pigmentation of the skin.

The bacteriocidal power of the sun is strong, tubercle bacilli being destroyed by a few minutes exposure to the air and sunlight. How much more rational then is the treatment of tuberculous sinuses and fistulas by air and sunlight than by heavy compresses and antiseptics, and how much more hygienic and sanitary to keep these patients on broad porches in the pure air and sunlight than in the rooms and wards of any City Hospital.

DR. HORACE LO GRASSO, *Perrysburg*—I am sorry that time will only permit of a few cursory remarks on Dr. Pryor's most excellent paper, but the subject has been presented with such explicitness that discussion, after all, will not throw any new light on the subject.

It is within memory of us all, of the time when it was believed that tuberculosis, if curable at all, could be cured only in favorable climates; and, when our eastern pioneers in tuberculosis, of which Dr. Pryor was a leader, made the announcement that tuberculosis was not only curable but that it could be arrested in any climate, if proper out-of-door life and rest was employed, those who did not look upon that announcement with skepticism looked upon it with perfect indifference. Today, our confidence in the out-of-door treatment for tuberculosis is so great that there is no county nor large city in this state that has not or is not contemplating the building of a tuberculosis institution.

Although Dr. Rollier has been carrying on his work for the last twelve years and has made comprehensive reports, from time to time, on the value of Heliotherapy upon surgical tuberculosis, the sun treatment has been given no serious thought in this country. It has been looked upon as a sort of fad by the skeptics; and, like the out-of-door treatment for pulmonary tuberculosis, it will be a long time before it will be given full recognition by the medical profession at large.

In Europe where Dr. Rollier's method of sun treatment is being extensively tried out, the comments are most favorable and encouraging; and, to-day, Heliotherapy, though not yet widely applied, has been given its proper place and standing by those who are employing the method. It is no more a matter of experiment but a recognized treatment that may revolutionize the management of all diseases where resistance plays an important part.

The question that arises in our minds presently is whether Heliotherapy can be carried out with success in our climate. Our limited experience, at the J. N. Adam Memorial Hospital, has convinced us, as Dr. Pryor's report shows, that Heliotherapy can be carried out in this climate with most encouraging results. We all admit that our climate does not meet all the requirements, both in summer and winter, for the daily administration of the sun treatment; but, such an ideal climate does not exist even at Leysin where the best results have been obtained by Dr. Rollier.

In winter, especially in a low altitude, on account of the sun not being always sufficiently strong and on account of the large number of unfavorable days when sharp winds or snow flurries are frequent, the sun bath is naturally, at times, interrupted and the treatment placed under some handicap; still, our results, even

in winter, have been so satisfactory that I will not hesitate to predict that it will be only a matter of time when, like the out-of-door treatment for pulmonary tuberculosis, Heliotherapy will be practiced with success in all climates and at all seasons.

Like all new methods of treatment, the inauguration of Heliotherapy at Perrysburg was hard and at times discouraging. This was especially so since we had to carry out the work in temporary quarters, and that cases sent to us were not only very few, but they were cases that had resisted all surgical interference and had taxed the patience of the physician. Most of the cases had been operated upon several times, presented severe secondary infection, and were bed and fever-ridden. The results in these cases have of necessity been slow, but have convinced us of the great therapeutic value of the sun rays in the treatment of surgical tuberculosis. The tonic effect of the sun in these cases has been marvelous. The more we study the effect of the sun rays upon surgical tuberculosis, the stronger do we feel, in the plea, that surgical interference should be a matter of last resort in the treatment of surgical tuberculosis and then only as an adjunct to Heliotherapy.

It is true that Dr. Hyde and myself have done the work at the J. N. Adam Memorial Hospital, but the credit for our success must be given entirely to Dr. Pryor. Were it not for his unselfish devotion to the welfare of the tuberculosis sufferer, and had he not given his full hearted encouragement, and lent us his moral support, I can assure you that Heliotherapy would not be carried out at Perrysburg to-day. He will be the means of the general adoption of Dr. Rollier's Method of Heliotherapy in this country. Only through his untiring efforts can Buffalo boast of having the first sanatorium in the United States, especially designed for the properly carrying out of Heliotherapy.

DR. ALBERT H. GARVIN, Ray Brook—The most neglected field in the treatment of tuberculosis is the child. There is no provision made that to any extent covers the situation. If one makes plans for the care and treatment of a child suffering from tuberculosis, he is impressed with the scantiness of the resources at hand. It is a rule of the State Board of Charities that children shall not be treated in the same wards with adult patients, and this rule is a wise one. The accommodations for children should be separate in every respect, and the equipment for their care should be different.

The first important point in this presentation is the announcement of a large resource for the care and treatment of children suffering from bone and gland tuberculosis.

We are coming to view tuberculosis in the adult in a little different light than formerly.

The views of Von Behring have received considerable support in the experimental and clinical work of Hamberger and Romer and others. We may consider the development of clinical tuberculosis in the adult as occurring upon the basis of a childhood infection, and that, according to Von Behring, the type of reaction is such that depending upon the dose the avoidance of clinical pulmonary tuberculosis in the adult is impossible.

In the early days of the tuberculosis campaign much emphasis was placed upon the diagnosis, almost to the exclusion of the fact that there were certain patients who in spite of the most careful watching ultimately developed pulmonary tuberculosis and progressed to a fatal issue under our eyes.

The ideas of Romer in the explanation of clinical tuberculosis in the adult that it was the result of reinfection or metastasis from very early infections is borne out to some extent by clinical experience. If we conceive of the idea that our adult clinical tuberculosis develops upon the soil of an infantile or childhood infection, the importance of the child as a factor in treatment and control of the infection is apparent. The essential point that Romer emphasizes is the avoidance of mass infections in childhood.

We have had presented to us to-day one of the first attempts on a large scale to adequately meet this situation. I am not personally familiar with the entire details of the Rollier treatment, but in the larger aspects of this endeavor at Perrysburg, we have presented to us for the first time adequate resources in a large community for the treatment of children who have been unfortunate enough to suffer from mass infections.

#### POLLINOSIS (HAY FEVER) A CONSIDERATION OF ITS TREATMENT BY ACTIVE IMMUNIZATION.\*

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**D**EFINITION.—Hay fever or pollinosis is a disease which manifests itself in the spring, from the latter part of May or the early part of June, until the middle or end of July; and in the autumn from the middle of August to the end of September or early October. It is characterized by itching of the eyes and lachrymation, itching of the palate and face, sneezing, serous discharge from the nose, obstructed breathing and if the attack is very severe, sooner or later coughing, difficult breathing accompanied by wheezing.

It is caused by the action of pollen grains from flowering plants. The pollen is carried by air currents and inspired with the air we breathe;

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if the recipient is susceptible to the particular pollen, an attack of pollinosis promptly ensues.

*Historical Sketch.*—In 1673, Benningerus described the condition now designated as "hay fever." He gave the history of a patient who had paroxysmal attacks of sneezing for several weeks during the time the roses bloomed each year. Heberden, an English physician about one century later made a reference to the same condition. In 1819, John Bostock gave a most comprehensive description of the disease. He, himself suffered with "pollinosis." His description was so complete that nothing more can be added to it. From him the name of Bostockschen catarrh was derived.

*Etiology.*—Many theories have been advanced as to the cause of hay fever, and a great number of speculations far afield of the true etiology have been entertained. Numerous physicians, even at the present time, consider that this disease is a neurosis. In 1902, Rudolph published a paper in which he stated that hay fever should be classed with the degenerative psychoses of which he described two varieties, the hysteroid and the epileptoid forms. When bacteria were found to be the causative agents of various diseases, certain micro-organisms were then suggested as operative in pollinosis: Prominent among these were various vibrios, and today vaccines of mixed bacteria are put forth commercially as a cure for this condition.

Elliotson suspected that pollen was the etiological factor in "hay fever," and in 1873, Blackley, as a result of various experiments with pollen, concluded that these small grains which were carried in the air during the flowering season of plants, were the undoubted causative factor. But, it was left to Dunbar and his co-workers to settle the question definitely. They examined the pollen of thirty varieties of graminaceæ and cyperaceæ and found them active; also active were swamp-pink, lily of the valley, hairy Solomon's Seal, rape, and spinach. Their experiments led them to examine the plants which caused the condition in the United States and they found that rag-weed, golden-rod, asters and chrysanthemums caused symptoms when applied to the mucous membranes of susceptible individuals, while normal controls did not react.

Thus Dunbar and his associates, notably Kamman, Liefman and Prausnitz, placed the etiology of hay fever on a scientific basis. They also demonstrated that a patient may be susceptible to one or more pollens, and according to Koessler, the following list of plants have pollen which have been found to cause "hay fever" symptoms. Patients suffering from the spring variety reacted to the following Graminaceæ:

- Alopecurus pratensis, Meadow Foxtail, May to July.
- Anthoxanthum odoratum, Sweet Vernal Grass, April to July.
- Cynosurus cristatus, Crested Dog's Tail, June to August.

- Avena Sativa, Common Oat, June to July.
- Festuca Octoflora, Slender Fescue, May to August.
- Festuca Rubra, Red Fescue, June to August.
- Festuca Elatior, Meadow Fescue, June to August.
- Hordeum Sativum, Common Barley, June and July.
- Lolium Perenne, Ray Grass, June to August.
- Phleum pratense, Timothy, Cat's Tail, June to August.
- Poa Annua, Low Spear Grass, April to October.
- Poa pratensis, Kentucky Blue Grass or June Grass, May to August.
- Poa triflora, False Red Top, June to August.
- Secale Cereale, Rye, June to July.
- Triticum sativum, Wheat, June to July.

Patients manifesting autumnal symptoms were susceptible to the pollen of the following dicotyledones:

- Ambrosia artemistæ folia, Ragweed, July to September.
- Ambrosia bidentata, August to September.
- Ambrosia trifida, Great Ragweed, July to September.
- Aster, Starwort, August to October.
- Chrysanthemum Leucantemum, Oxeye Daisy, June to September.
- Chrysanthemum Indicum, August to October.
- Cirsium lanceolatum, Common Thistle, July to September.
- Cirsium arvense, Canada Thistle, July to September.
- Rudbeckia hirta, Blackeyed Susan, June to August.
- Solidago Cassia, Goldenrod, August to September.
- Solidago Canadensis, Goldenrod, August to September.
- Solidago Nemoralis, Goldenrod, August to September.
- Graminaceæ.
- Zea Mais, Indian Corn, July to August.

Goodale has tested the cutaneous reactions of hay fever patients with a great variety of plants and we add from his list the following which he found to be active: beech, wormwood, burdock, fall dandelion, hawkweed, pigweed, wild carrot, tansy, japanese rose and mock orange.

Our experience agrees with Koessler, in the opinion that even this extensive list of plants may not be complete.

There must necessarily be predisposing causes to this disease as the vast majority of mankind is not affected by pollen, while to a small minority the contents of these kernels are intensely toxic. Thus, we recognize two factors which are of importance in the etiology of "hay fever":—Nasal and pharyngeal pathological conditions and heredity.

Among the nasal and pharyngeal conditions which would predispose to this disease are many obstructions, such as enlarged turbinate bodies, deviated septa, spurs, and adenoid vegetations; also any diseased conditions of the mucous mem-

branes as are found in atrophic and hypertrophic rhinitis, and suppurative accessory sinus disease. All of these conditions render the mucous membranes liable to erosions from irritating discharges, thus offering a place for parenteral absorption of the pollen contents during the period that flowers bloom and pollenize.

Heredity is an important factor in supplying subjects for this disease. There seems to be a particular permeability of the skin and mucous membrane transmitted from the parent who has suffered or is suffering with this or some allied ailment to his or her offspring. Among our patients were two brothers with hay fever, a brother and sister with hay fever, a lady with hay fever whose son suffers with asthma, two cases in which a father and one or more children suffer with hay fever, a young lady with hay fever who had intense eczema as a child and whose mother suffers with eczema, rebellious to treatment.

It is probable that pollinosis occurs the world over. We know it to be endemic in Europe, Africa, Asia and North America.

More males are affected than females.

It is found in all strata of Society and the reason that some writers think that it occurs mostly in cultured and highly strung people, is because the poorer and less cultured classes are not so fastidious and are unable to pay much heed to a "cold in the head" which lasts six weeks every year.

*Pathology*—Hay fever or pollinosis is not a fatal condition and there exists no autopsy records of patients dying while suffering from symptoms of "hay fever." Thus our idea of the pathogenesis of this disease is based mainly on experimental and deduced evidence.

According to Dunbar, the pollen extract which contains about 40% of protein is a "toxin," the active portion of the protein being the albumin fraction. From our experiments and those of Koessler, we are not in accord with his views, because the action of this protein does not conform to the postulates of Ehrlich as regards true toxins, such as the toxin of diphtheria and tetanus. Nevertheless, pollen protein holds a position which is unique inasmuch as it has toxin and non-toxin attributes. Although it is thermostable, non-toxic to the majority of mankind and animals, the intoxication with pollen shows no incubation time (its action is almost immediate), still it is toxic in very minute doses but only to sensitive individuals; it is completely specific, it produces antibodies when injected into animals and man as demonstrated by complement fixation, but its toxin-antitoxin neutralization curve does not follow the law of multiple proportions.

In 1906 Wolff-Eisner suggested that this disease was a condition of anaphylaxis. Dunbar, in 1912 stated this condition is not one of anaphylaxis based upon the following experimental data. He was not able to produce passive ana-

phylaxis in guinea pigs by injecting intravenously serum from hay fever patients and 24 hours later injected intravenously a quantity of pollen extract; also that a condition of antianaphylaxis does not occur after the hay fever attack. But he has produced symptoms resembling anaphylaxis in hay fever patients by injecting a large dose of pollen extract while normal controls gave no symptoms whatever with the same dose. He also showed that the pollen extract was capable of producing symptoms similar to anaphylactic shock in guinea pigs which had been previously injected with the same antigen.

We are opposed to Dunbar's view on this question from his experimental facts and our own experimental deductions. Our experience has shown that the amount of antibody in the serum of untreated pollinosis patients excepting during the attack, is so small that it would be well nigh impossible to obtain, and were it possible to obtain, it would be impossible to inject a sufficient amount of serum to sensitize the guinea pig.

On the other hand, Koessler was able to produce passive anaphylaxis in guinea pigs. He obtained the blood from patients while in the third week of their seasonal attack. Four c.c. of this serum was injected intracardially into guinea pigs and twenty-four hours later they were reinjected with the same serum. All the animals so treated showed severe typical symptoms of anaphylaxis. Dunbar used hay fever patients preceding the attack, while Koessler took the blood during the attack, therefore, the discrepancy in the results.

Koessler tried to show that the pollen protein circulated freely in the blood of patients suffering with a seasonal attack of hay fever and for this purpose obtained enough blood from a patient who had severe asthmatic symptoms to give 20 c.c. of serum. Four guinea pigs were injected subcutaneously with 5 c.c. of serum, and twelve to eighteen days later were injected intracardially with 1 c.c. of 1-10,000 dilution of ragweed pollen extract and three out of the four guinea pigs showed severe symptoms of anaphylaxis. From this experiment he deduced that in the serum of his patients there was a pollen protein; this may be true but it is possible to theorize on this from a different premise. It can be argued that the blood injected contained enough amboceptor to sensitize the guinea pigs against subsequent injection of the specific antigen.

Richet and Hericourt in 1898 applied the name of anaphylaxis to a symptom complex of vomiting, diarrhoea, respiratory distress and sometimes death, which was produced in animals by giving sublethal dose of some toxic protein substance or a dose of some non-toxic protein substance followed in twelve days by a second dose of the same substance which did not cause any symptoms in control animals not previously so treated. Since then much research work has



been done and many theories on the mechanism of this phenomenon formulated.

From the work of Vaughan and Wheeler on "split proteid", of Sleswjk and others on the rôle of the complement during anaphylactic shock, and that of Friedberger and Hartock and Ulrich Friedeman, on the production of anaphylatoxin in vitro, our present conception of the *modus operandi* of this phenomenon has been evolved. These investigators have given us the following hypothesis:—When a foreign protein substance is injected into an animal there is a production of antibody or amboceptor specific for that particular protein; that this amboceptor unites with the antigen and by action of the complement in the blood, the antigen undergoes proteolysis and the products of the proteolysis produce the symptoms known as anaphylactic shock. The antibody is formed after the first injection and when the second injection is given at the proper time, the proteolysis goes on very rapidly with the production of these protein fractions or anaphylatoxin in large quantity which produces the symptoms.

Pollinosis is due, as previously stated to a sensitization of an individual by the pollen contents through the respiratory tract. There must, however, be at the time of sensitization, an abrasion of the mucous membrane so as to make absorption possible.

The attack of hay fever is comparable with the effects of the Wolff-Eisner tuberculin reaction in the skin or the Calmette reaction in the eye. During the flowering season of plants, the pollen is carried by air currents and is breathed in by all of us. The susceptible person becomes ill from the effects of the pollen contents on his respiratory mucous membrane and the skin of the face. If, for example a quantity of air laden with pollen be deposited in the stomach or rectum, the symptoms would be localized in the stomach or rectum and not in the nose, eyes, mouth or face. If a large dose of pollen extract be injected subcutaneously into a susceptible individual, typical symptoms of anaphylaxis may result, as has been observed in a patient where we administered an excessive dose of the extract. Within ten minutes after the exhibition of the drug, this patient felt a sense of oppression in the chest, a suffusion of the face, her breathing became labored, marked palpitation of the heart occurred and within forty-five minutes, a giant urticarial rash covered her entire body. All of the symptoms subsided within two hours and the patient felt sufficiently well enough to get up. Many investigators of this subject have reported typical attacks of hay fever after giving large doses of pollen extracts but we have never noticed any such effects. We have observed as above stated, anaphylactic symptoms but never anything which stimulated hay fever.

#### SYMPTOMS.

A. *Subjective*—When the yearly attack is about due, the patient first notices an itching at

the inner side of the eyes, which may disappear only to recur with greater intensity in a few days. This usually is accompanied by itching of the nose, the skin of the face and palate, which may continue for some time without becoming worse, but in due time, the patient experiences fullness in the head, stuffiness of the nose, and in the morning particularly, attacks of sneezing followed by a sero-mucous discharge. At this time the eyelids itch intensely, so much so that the patient can hardly refrain from rubbing. Itching of the palate is also pronounced and the patient very often scratches the palate with the finger. Weakness is complained of and there is a disinclination to stir about. Perspiration is oftentimes free. This condition continues abating and increasing from time to time. If the nose is completely obstructed, as it usually is, sleeping is interfered with and soon a cough supervenes and to the clinical picture is added attacks of shortness of breath and wheezing, particularly at night. At the end of the seasonal attack, all of these symptoms gradually subside, leaving no evidence of the suffering and discomfort which has been endured. The spring variety usually does not last longer than four weeks, while the fall variety last about six weeks. Occasionally patients present themselves who suffer with "hay fever" symptoms throughout the entire summer.

B. *Objective*—The eyelids appear red, the conjunctival blood vessels are engorged and the mucous membrane between them is whitish pink. There are occasionally small papular elevations in the skin of the face. The mucous membrane of the nose is swollen, the blood vessels are engorged and the mucous membrane between these blood vessels is also whitish pink. The palatæ blood vessels are prominent and the intervening mucous membrane is anemic. The temperature of the patient ranges between 98 degrees and 101 degrees, seldom reaching 102 degrees. From this description it can readily be seen that the mucous membranes are not inflamed. They are more inclined to be pale while the blood vessels which course through them are engorged.

*Diagnosis*—Given a patient who periodically each Spring or Summer becomes ill with a sickness which corresponds to the description mentioned in the symptomatology, and if these symptoms begin and end approximately the same time each year, it can safely be said that the patient is suffering with pollen disease. The question before us now is, "Which pollen is operative in a given case?" To answer this query it is necessary to test the patient with the pollen of all the flowers which bloom during the time of the attack. The list of plants mentioned previously gives a large variety of active pollens and if possible, the pollen of each of these should be employed for the testing of the patient to determine the one or ones to which the individual is anaphylactic.

*Methods*—There are three methods by which

it is possible to know which pollen is operative in a given case. A drop of weak extract of a given pollen may be instilled into the lower conjunctival sac of the eye. The one which produces congestion and swelling of the caruncle and mucous membrane of the lid is the one to which the patient is sensitive. A very minute quantity of the extract may be injected intracutaneously, and the pollen to which that patient is anaphylactic will cause swelling and redness around the spot where the pollen extract is deposited. A very minute quantity of pure pollen may be gently rubbed into a small scarification wound of the skin and a wheal will develop at and around this point of scarification if the patient is susceptible to that pollen. Some patients are sensitive to more than one pollen and it seems that there may be in some cases a general susceptibility to all pollen, so that when the reactions are marked it is possible to conclude that this is the specific pollen which is causative of hay fever in a given case.

To be sure that no other factor than the pollen is causing the reaction, it is advisable that a negative control be established by simultaneous vaccination of another patient. No swelling should occur in the control.

The majority of patients suffering with pollen disease are susceptible to the pollen of timothy, red-top and blue grass, or to ragweed and goldenrod. Only the exceptional patient is anaphylactic to the pollen of other plants but it is just these exceptional cases that give us the most trouble.

*Prognosis*—Many patients become progressively worse each season, while with others the symptoms are milder after each attack. We are of the opinion that every case can be helped, the symptoms stopped or abated in severity, if the patient's resistance is such as to enable him to build up an immunity.

#### TREATMENT.

1. *Palliative*—While the patients are suffering with the attack, it is possible to give them relief with drugs, particularly cocaine and adrenalin. Weak solutions of these may be instilled into the eyes and applied to the nose. In this way the itching of the eyes and obstructed breathing are mitigated. As soon as the effects of these drugs pass away, the patient suffers as before. Their continuous exhibition is fraught with dangers—the habit of cocaine snuffing may be acquired, and adrenalin has been found to cause an arteriosclerosis of the large blood vessels, due to the increased blood pressure which it produces.

Patients suffering with this disease may dwell in localities where the causative pollen-bearing flowers do not grow, such as Fire Island, Green Mountains, White Mountains and the higher altitudes of the Adirondack Mountains. A pilgrimage to these places must be made each year and they must remain away the entire six weeks to avoid the disease.

2. *Curative*—Before entering into a description of the methods advised, for curative pur-

poses, it is not amiss at this point to dilate upon the theoretical factors which have to be considered to understand the basis of such treatment. We have stated above that pollen disease is an anaphylaxis, and anti-anaphylaxis must be accomplished before a cure can be effected.

According to Rosenau, Anderson, Otto and others, if on the seventh, eighth or ninth day after the first injection, a massive dose of antigen is injected into the animal, the symptoms of anaphylaxis do not occur on exhibiting a dose of antigen on the twelfth day. The refractory condition so produced is called anti-anaphylaxis. This same animal will, twenty or thirty days later, become slightly sensitive to the antigen; the symptoms being mild, fatal reactions rarely occurring. The reason for this refractory condition so produced is answered by the researches of Neufeld and Dold, Kraus, Ritz and Sachs, Izar, Friedberg and Mita, Zinsser, and Bordet, who, working on the quantities of antigen, amboceptor and alexin, which would be most favorable for the production of anaphylatoxin in vitro, found that large quantities of the antigen as compared to the other ingredients inhibited the production of anaphylatoxin. They also found that an excess of the amboceptor will produce the same result. In view of these facts, they conclude that the great concentration of antigen in the blood of the refractory animal inhibited the production of sufficient anaphylatoxin to cause symptoms.

Zinsser and Dwyer, working with typhoid anaphylatoxin, showed that guinea pigs treated with a sub-lethal dose of anaphylatoxin, developed a tolerance which enabled them to resist one and one-half to two units of the poison, the tolerance developing within three days and lasting to a slight degree as long as two months.

From the foregoing facts, hypothetically it should be possible to treat patients suffering with pollinosis by one of four methods:

1. By injecting a dose of pollen extract just before the "hay fever" time and repeating the procedure in twenty to thirty days.

2. By injecting a large quantity of immune serum during the attack. This we have accomplished in one of our cases. From G. G., a patient we took about two ounces of blood from a vein; after the proper precautions of a Wasserman reaction, we injected 8 c.c. of the serum subcutaneously into a patient of thirteen years, suffering at the time with a violent attack of pollinosis. Within thirty-six hours, this little patient had no symptoms of "pollinosis" and no signs of the disease returned during the entire season.

3. By injecting very small amounts of pollen extract at intervals of ten days or less so that only minute quantities of anaphylatoxin be formed and the patient's tolerance raised.

4. By injecting very small doses of anaphylatoxin made in vitro to produce the same results as in method number three.

A. *Passive Immunization*—Weichhart has

placed on the market a preparation which he terms graminol. It is a serum from the cattle during the "hay fever" time. Graminol does not contain specific antibodies, but it is said to give relief in from 61 to 75 per cent of cases, according to the report of the German Hay Fever Association.

By repeated injections of pollen into horses and rabbits, Dunbar and his associates were able to produce an immunity in these animals, as tested by the complement fixation reaction, especially in rabbits whose serum in some cases would fix complement in dilutions of 1-50,000. Dunbar has transferred passive immunity to individuals by injecting the serum of these animals.

From these experiments he has evolved his Pollantin, which he considers a specific in the treatment of pollinosis. Pollantin is a horse serum antitoxin and in itself can produce the condition of anaphylaxis by repeated use and thus interferes with the cure that it is supposed to accomplish. This product, in our hands, has been a failure notwithstanding that the German Hay Fever Association has reported 59 to 69 per cent of successful results with pollantin.

The action of these two preparations may be explained as follows: they undoubtedly contain anti-bodies: in the case of pollantin, the antibodies are specific while those in graminol are not specific, nevertheless these anti-bodies furnish the necessary element for the binding of the complement in the secretions of the respiratory mucous membranes to the pollen contents or antigen. This effects a rapid digestion of the antigen into harmless products, such as amino acids, and thus the toxic material does not remain long enough in contact with the tissues to produce symptoms.

B. *Active Immunization*—Holbrook Curtis was probably the first investigator to effect an active immunity in pollen disease. This observer as early as 1900, reported favorably on this subject. He used aqueous and alcoholic extracts of the flower and pollen of ragweed, golden rod and lilly-of-the-valley. These were administered subcutaneously and by mouth.

Dunbar, in the earlier period of his investigations on this subject, tried to produce active immunization by injecting the pollen extract, but came to the conclusion that such immunity could not be secured by this means. He failed probably because the pollen which he used may not have been the only pollen which caused the disease in the cases which he treated; furthermore, he used an excessive dosage which, from our present experience, breaks down the defensive potentialities of the patient, thus frustrating the result which he desired.

Noon and Freeman, in 1911, published the results of their work on the active immunization of pollinosis by injecting gradually increasing doses of timothy grass pollen extract. They reported eighteen cases. Excellent results were obtained in three, thirteen were markedly improved while two cases were not benefited.

In a preliminary report, Clowes in 1913, gave his results on the treatment of eight cases of pollinosis. All of the cases were satisfactorily influenced.

Koessler, between 1910 and 1914, had treated forty-one cases of which four were cured, twenty-nine markedly improved and eight were not benefited.

*Preparation of Pollen Extract.* The technique which we have followed during 1913 and 1914, has given us an effective antigen for curative purposes.

The pollen was ground up for several days with sand and a sufficient amount of 5 per cent sodium chloride solution with  $\frac{1}{2}$  per cent carboric acid added to prevent the growth of microorganisms. This mixture was placed in the thermostat for seventy-two hours at 37 degrees C. and then filtered by suction. None of these extracts by this method gave the biuret reaction and few gave a positive ninhydrin reaction. The filtered extract was then precipitated with eight parts of absolute alcohol and filtered quickly in a Buchner funnel to avoid any denaturation, if possible, of the active principle by so strong a concentration of alcohol. The precipitate was dried and weighed. This precipitate, on testing has never given a biuret or ninhydrin reaction. It is partly soluble in 0.85 per cent sodium chloride solution and physiologically active in very weak solutions.

A total nitrogen content of one of the extracts of ragweed was performed and it showed 0.066 per cent of nitrogen. This same solution, on December 20, 1913, gave a positive ninhydrin reaction whereas on March 24, 1914, three months later, the test was doubtful. This shows that pollen extracts in solution deteriorate on standing.

The dried precipitate was dissolved in 0.85 per cent sodium chloride solution with  $\frac{1}{4}$  per cent of carboric acid and serial dilutions made. With these solutions the patients were treated by hypodermic injections.

The fact that the extract is not completely soluble shows that there must occur some denaturation by the alcohol, and for this reason we are now endeavoring to perfect a method of extraction in which no such factor enters. It is our desire to report the results of our present research in this direction in a subsequent publication.

Eleven cases were treated in 1914, before and during the season for autumnal catarrh. Six cases were treated in advance of the attack. One of these was cured for the season, four had very mild symptoms, and one was not improved. Five cases were treated during the attack. The symptoms of four subsided after receiving from one to four injections, whereas one patient received no benefit. Altogether, there were five cures for the season. In four cases there was marked improvement. Of the two cases that were not improved, one had a polypoidal degeneration of the middle turbinate with under-

lying bone necrosis. The patient has distinct asthmatic attacks every night and it was impossible to say whether the attacks were due to his pollinosis or to the local nasal condition. The other was a physician who reacted both to ragweed and goldenrod pollen. He received in all thirty-three injections, alternating the ragweed and the goldenrod extracts. He came very irregularly for treatment. It is possible that at times the treatment was too intensive and his physical condition was so poor that possibly he could not develop a tolerance.

Nine of our cases reacted to ragweed pollen and two reacted to that of both ragweed and goldenrod. Both of these latter cases received both goldenrod and ragweed antigen hypodermically. One was cured but the other was not improved. When a patient is sensitive to more than one pollen, individual doses of each extract should be administered, in order to determine when the tolerance is sufficiently raised for each. Mixing the antigen is too empirical.

There are two ways of determining when a patient has become sufficiently immune to warrant discontinuance of the treatment.

1. With a complement fixation test.
2. From the size, intensity and duration of the wheal produced by skin scarification, at different times, namely, before and during the treatment.

The scarification method is the one we have generally used, to diagnose and determine the degree of immunity induced. The wheal produced by the initial vaccination is measured, its time of appearance and its duration noted. After five or six treatments the patient is revaccinated and the wheal is observed again as before, and compared with the former results. When the wheal is very small or does not appear, the patient is sufficiently immune and probably will go through the season with very mild symptoms or none at all.

Naturally the question arises whether such immunization is permanent. We believe it is safe to say that, while the immunity may not be successfully carried over to the succeeding year, recurrences are much milder at least and patients require less re-immunization. An attack the following year can probably be overcome by very few injections.

The best time to begin treatment is probably about ten weeks before the attack may be expected to occur. Regularity of attendance at about weekly intervals is important.

We feel that cures were not accomplished in two cases because treatment was begun too early; and in two other cases because the patients were treated too irregularly. Furthermore, it is probable that some of these cases were susceptible to pollen other than that of ragweed and goldenrod. At the time of our initial work, we were not prepared with as large a variety of pollens as we now possess for the continuance

of this work along broader lines, which we hope in the future will enable us to bring about a large percentage of cases influenced by our attempts at immunization.

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CASE PROTOCOL.

| Name     | Age | Duration in yrs. | Nose and Throat Condition   | Reaction to Cutaneous Test | Condition in 1913   | Condition in 1914   | Number of Injections                               | Remarks   |
|----------|-----|------------------|---|----------------------------|---|---|--|---|
| A. E.    | 30  | 4                | Adenoids removed in 1912. Submucous resection in 1913. Nose very dry. Accessory sinusitis early part of August, 1914. | R. W. +<br>G. R. —         | Very severe attack. Aug. 1—Sept. 15.                      | Very mild attack. Aug. 17—Sept. 15                          | 28 R. W.<br>Dec. 3, 1913-<br>Sept. 10, 1914.       | Patient a chauffeur. Spent most of this summer around Lake Mohegan. Says he was markedly better this year than any previous year.                 |
| P. H. F. | 32  | 20               |   | R. W. +<br>G. R. ±         | Do.<br>Aug. 24—Sept. 24.                                  | Very severe attack. Aug. 14—Sept. 12.                       | 25 R. W.<br>8 G. R.<br>April 30-<br>Aug. 21, 1914. | Was not improved.   |
| G. G.    | 32  | 3                | Deviated septum. Enlarged inferior turbinate.   | R. W. +<br>G. R. —         | Do.<br>July 15—first frost.                               | Hardly any symptoms. Aug. 18—Sept. 12                       | 45 R. W.<br>Dec. 19, 1913, to<br>Sept. 12, 1914.   | Patient says he is much better this year than last. Moderate symptoms, Sept. 1-9, otherwise comparatively well.                                   |
| M. K.    | 21  | 6                | Submucous resection in 1912. Spur removed in 1913. Has now slight septal deviation and enlarged inferior turbinate.   | R. W. +<br>G. R. —         | Do.<br>Aug. 16—Oct. 1.                                    | Aug. 15—Sept. 10.   | 3 R. W.<br>Sept. 5-10, 1914.                       | Patient called to see me in middle of night because of aphonia and difficult breathing. Felt as if choking. Symptoms ceased after 3 injections.   |
| R. L.    | 23  | 17               | Enlarged inferior turbinate, on right.  | R. W. +<br>G. R. —         | Do.<br>Aug. 16—Oct. 1.                                    | Very mild attack. Aug. 17—Sept. 9                           | 49 R. W.<br>Dec. 29, 1913, to<br>Sept. 3, 1914.    | Only 6 bad days during the 23 days which the attack lasted.   |
| R. L.    | 19  | 6                |   | R. W. +<br>G. R. —         | Do.<br>Aug. 1—first frost.                                | Aug. 1—Sept. 9.   | 4 R. W.<br>Sept. 1-9, 1914.                        | Much better after first injection. Able to sleep at night, whereas before not at all.   |
| K. R.    | 38  | 0                |   | R. W. +<br>G. R. —         | (1st attack, 1914).                                       | Aug. 1—Sept. 7  | 1 R. W.<br>Sept. 6, 1914.                          | Felt entirely well the day after first and only injection.  |
| H. S.    | 38  | 1                | Polypoidal degeneration of left middle turbinate.   | R. W. +<br>G. R. —         | Very severe attack, with asthma. Aug. 15—first frost.     | Very severe attack, with asthma. Aug. 15—first frost.       | 2 R. W.<br>Sept. 4-9, 1914                         | Received 6 c.c. serum from G. G. Felt very much better but still gets asthmatic attacks.  |
| D. S.    | 22  | 9                | Deviated septum. Enlarged inferior turbinate.   | R. W. +<br>G. R. —         | Very severe attack. Aug. 15—Sept. 15.                     | Mild symptoms. Aug. 11—Sept. 8.                             | 8 R. W.<br>Aug. 21-<br>Sept. 8, 1914.              | Attack cut short slightly. Symptoms very mild after treatment was begun.  |
| S. S.    | 13  | 1                | Septal deviation.   | R. W. +<br>G. R. —         | Do.<br>Aug. 15—first frost.                               | Very severe Aug. 11—Sept. 7 (up to beginning of treatment). | 2 R. W.<br>8 c.c. serum from G. G.<br>Sept. 4-8.   | 8 c.c. serum from G. G. Thirty-six hours later no symptoms. No recurrences.   |
| G. W.    | 33  | 6                |   | R. W. +<br>G. R. ±         | Do.<br>Aug. 15—first frost. Asthmatic attacks every year. | Hardly any symptoms during the 5 days, Sept. 1—Sept. 6.     | 25 R. W.<br>8 G. R.                                | Worked during Aug. and Sept., 1914, in open fields on Long Island; only sneezed when in the fields, only a few times between Sept. 1 and Sept. 6. |

## VACCINE AND SERUM THERAPY.\*

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VACCINES and serums have been used for three distinct purposes: First, to prevent diseases which have not yet been contracted; that is, for prophylaxis; for example, vaccination against smallpox and typhoid fever and immunization against diphtheria. Second, to prevent the development of diseases which have been contracted but the symptoms of which have not yet developed; that is, cure during the incubation period; for example, the serum treatment of hydrophobia and tetanus. Third, to cure diseases which already exist; that is, specific treatment; for example, diphtheria, cerebro-spinal fever, gonorrhoeal rheumatism, acne, etc. These fluids are divided into three main classes—antitoxins, antibacterial serums, and vaccines. They are so different in their composition, action and results that each must be considered without regard to the other.

Antitoxins are substances capable of neutralizing the toxins of certain diseases. Probably they act by combining chemically with the toxins. They are produced by injecting the toxins of the disease in question into animals in such doses and at such intervals as to result in the development in the animals' blood of an unusually large percentage of protective chemical substance, or antitoxin. These animals' blood serum is commercial antitoxin. When injected into a patient it adds to the amount of antitoxin already present; that is, it produces or increases the degree of immunity. Such immunity is called passive immunity because it is acquired without the expenditure of energy within the patient's body. Diphtheria and tetanus antitoxins are the best examples of this group. Most pathogenic organisms do not produce sufficient soluble toxin to permit the development of an appreciable amount of antitoxin by the above method. Their harmful products are largely retained within their own bodies and act only when their bodies disintegrate. If these organisms, living or dead, are injected into the tissues of a healthy animal they eventually disintegrate and their contents, called endotoxins, are set free, resulting in the development of various antibodies which act in various ways to antagonize the action and life of the corresponding organisms. The resulting serum is antibacterial, or bactericidal, rather than antitoxic. When injected into a patient's body it adds to the total amount of antibodies present without effort on the part of the patient and therefore, like antitoxin, confers passive immunity. Antimeningitis serum is the best example of this group.

Immunity developed in an animal's blood following repeated injections of micro-organisms is active immunity, for it results from activity or

the expenditure of energy within the animal's body. The process of producing such active immunity by the injection of micro-organisms is vaccination, and the cultures and emulsions of bacteria, living or dead, designed for this purpose are vaccines.

The development of passive immunity through the injection of antitoxins or antibacterial serums is a matter of a few minutes or hours only, while the development of active immunity through the injection of vaccines is a matter of days or weeks. The development of passive immunity is without effort on the part of the patient's body, while the development of active immunity requires an expenditure of energy. This saving of both time and energy gives passive immunity through antitoxins and antibacterial serums the preference over active immunity through vaccines. But unfortunately passive immunity has been successfully produced in only a few of the germ diseases. So active immunization through vaccines has been attempted in most of the remaining diseases. Considerable success has followed these efforts. Vaccination produces antitoxins and also various other antibodies (agglutinins, opsonins, precipitins, bacteriolysins, etc.), which act in various ways in overcoming disease. The relative value of these anti-bodies differs in different diseases and we are not at present justified in emphasizing the general usefulness of any one of them.

## ANTITOXINS.

Diphtheria and tetanus are the well-known bacterial diseases for which useful antitoxins have been produced. Hay fever is produced by plant toxins and an antitoxin, pollantin, has been produced but cures have rarely resulted from its use. The daily application of the serum to the eyes and nose, where the toxins lodge, will occasionally prevent the disease. Pollantin is a proprietary remedy said to result from the injection of a number of different plant toxins into an animal; that is, it is polyvalent or shot-gun in character. Possibly more scientific methods will result in the development of various univalent antitoxins which will be specific against rose cold, hay fever, golden rod fever, etc.

Tetanus antitoxin is one of our most valuable serums. Because tetanus toxin has so great an affinity for nervous tissue it follows up the peripheral nerves and spends itself in the central nervous system, hence the symptoms. Union between tetanus toxin and nervous tissue is firm and access to the nervous system from the blood stream is difficult, so antitoxin, injected subcutaneously or even intra-venously, is not usually carried to the nervous system in sufficient amount to break up the toxin-nerve union. However, if the antitoxin reaches the nervous system first, even though in small amounts, it will neutralize the toxin and so guard the nervous system from injury. That is to say, if the antitoxin is given subcutaneously within a few hours after the te-

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tanus germs are introduced into a wound it will nearly always prevent the development of the disease. If the disease already exists, antitoxin must be given intra-spinally as well as subcutaneously. In either case the wound should be excised or cauterized.

Treatment by diphtheria antitoxin is too well established to justify comment here. Permit me, however, to call your attention to some recent work regarding dosage. Schick and his associates in Vienna have observed that in animals the main immunity resulting from antitoxin is against toxin injected later and that toxin injected previously acts without much influence from the antitoxin. If this be true, then practically all we can hope to do is to guard a diphtheria patient against the effects of toxin liberated after the first dose of antitoxin. Supposing that a patient receives a sufficiently large dose at the first injection, then he will not die unless he has already been fatally poisoned by the toxin. Inasmuch as antitoxin injected intra-muscularly is not liberated all at once to the blood stream but continues to feed into it for a day or two, it should not be necessary to give more than one dose. Schick has shown that the amount of antitoxin needed for this first and only dose varies with the body weight. One hundred units per kilogram (2 1/5 pounds) is sufficient for mild and medium cases, but in severe cases the dose may run up to 500 units per kilogram, which he claims gives the maximum curative effect. A child of 44 pounds, then, should usually receive a single dose of 2,000 units and in the most severe cases not over 10,000; while the dose for an adult of 132 pounds would usually be 6,000, with a maximum of 30,000 units. If time justifies Schick's claims there will be a great saving in antitoxin.

#### ANTIBACTERIAL SERUMS.

Flexner's anti-meningococcus serum is the only antibacterial serum which deserves mention. Given intra-spinally after lumbar puncture, it has robbed cerebro-spinal fever of many of its terrors. However, without early diagnosis bad results still occur. Lumbar puncture is an easy procedure and should be one of the accomplishments of the general practitioner. Most antibacterial serums have been failures, as, for example, anti-typhoid, anti-streptococcus and anti-pneumococcus serums. However, Dr. Rufus Cole of the Rockefeller Institute is now working with an anti-pneumococcus serum which promises to have curative power. It is a bactericidal serum and is effective against the particular strain of pneumococcus by which it is produced.

#### VACCINES.

Hydrophobia well illustrates the immunity which may be produced by a vaccine. Rabies is a disease in which the virus enters the body through a wound and follows the nerve fibres to the central nervous system. In the nervous system it proliferates, causing the usual symptoms and death. Pasteur transferred the disease

to rabbits and used their dried spinal cords as sources for his vaccine. He emulsified the dried cords and made repeated injections, increasing in virulence, during the incubation period. This treatment he found efficient in preventing the disease, but as yet no cure has been discovered.

The prevention of smallpox through vaccination with cowpox virus ranks among the greatest benefits the world has ever received from one man. Cowpox is probably smallpox virus attenuated by passage through the cow. The results of Jenner's discovery have been so remarkable that there are now few unprejudiced, thinking men who doubt its efficacy. But the unthinking crowd, missing the object lesson of the disease itself, are clamoring for relief from the burden of vaccination. A few unfortunate mischances have caused some reasoning men to question the wisdom of compulsory vaccination of school children. There is a vaccination bill now pending before our Legislature which calls for the most careful consideration of this Society. Smallpox vaccination is the most firmly grounded of all vaccination treatments and probably as little dangerous as any. The most striking effects from vaccines have occurred in their prophylactic rather than their curative use. Vaccination against typhoid fever is now established on a firm clinical as well as theoretical foundation. Apparently it is a safe procedure. It does not absolutely prevent, for no defenses are able to withstand all conceivable assaults. But it nearly always confers immunity for one or two years. Valuable as it is, it cannot replace efficient hygiene and sanitation. Should communities attempt this substitution, probably there would be more typhoid fever than at present. Vaccination against typhoid fever should be used in addition to, not in place of, our present preventative measures.

Recent studies in immunity, particularly those of Sir Almroth Wright of London, first published at the beginning of this century, have led to the use of vaccines in nearly all of the bacterial diseases, and it is this new phase of the subject which is perhaps most interesting at the present time. Unfortunately the theoretical basis is as yet too uncertain and clinical experience too meagre and contradictory to warrant positive conclusions regarding most of the diseases which have been subjected to vaccine treatment. For purposes of vaccine therapy bacterial diseases may be divided into two groups—(a) localized and chronic infections, and (b) acute general infections or septicaemias. In localized and chronic infections the foci of disease are so well walled off from the blood stream that pathogenic organisms are only rarely found in the blood and interchange of fluids between the foci and the blood is limited. Under these conditions germs in the foci cannot readily stimulate the production of antibodies in the blood, and similarly, antibodies in the blood cannot readily penetrate the walls of the inflammatory foci to antagonize the micro-organisms and their

products. This means that the blood will be comparatively little affected by the disease. That is, power to develop immune bodies in response to vaccination will not be seriously impaired, or, in other words, active immunity can be produced. If the antibodies in the blood and lymph developed through vaccination are unable to penetrate into the foci of disease in sufficient amounts, then the local circulation must be sufficiently improved to bring the antibodies in contact with the micro-organisms in order that cure may result.

In general infections or septicaemias, like typhoid fever, puerperal septicaemia, malignant endocarditis, etc., every part of the body is, from the first subjected more or less to the attacks of the micro-organisms and is available for the production of anti-bodies. If the anti-bodies are sufficient to overcome the micro-organisms, then recovery will follow, and vice-versa. It is reasonable to assume that the patient will produce sufficient anti-bodies if he is capable of doing so, for all parts of his body are available for the work and are being constantly stimulated by the circulating micro-organisms and their products. More micro-organisms in the form of vaccine can hardly be expected to stimulate further the production of anti-bodies for an excess of such stimulus constantly exists until the disease begins to subside. The injection of vaccines in these cases seems like adding insult to injury. It would be as reasonable to inject a vaccine directly into a localized focus of inflammation as to inject it into lymph or blood spaces in a case of septicaemia.

Concerning this point R. M. Pearce, Professor of Research Medicine in the University of Pennsylvania, recently said: "There is no explanation for curative vaccine therapy that rests on either experimental investigation or the principles of immunity. All attempted vaccinations in this group must be considered as purely experimental." (*Jour. A. M. A.*, 1913, 2125), and Theobald Smith of the Rockefeller Institute says—"In processes associated with fever and bacteriaemia, science says hands off until we know whether we have a progressive disease or a more localized infection in which the excursions into the blood are secondary. In any case, the use of vaccines in these cases must be regarded as experimental and should not be undertaken save in conjunction with one trained in immunological problems." (*Jour. A. M. A.*, May 24, 1913). Of the men best qualified to judge this question nearly all agree with Dr. Pearce and Dr. Smith. There are, however, some men who hold opposite views. The commonest argument in favor of vaccine treatment of general blood infections is urged by R. W. Allen in his work on Vaccine Therapy. He says—"The number of organisms present in the blood in such cases is relatively few; but inasmuch as opsonin and probably other

protective substances are not elaborated in the blood stream, the presence of the organisms in the blood has no power of exciting the production of the protective substances which are lacking. The introduction of a dead culture into the subcutaneous tissues has, however, this effect and the substances so elaborated are rapidly carried into the general circulation to make up the defect therein present." One cannot help wondering how he knows that there are few micro-organisms in the blood stream and that, so located, they are incapable of causing anti-body formation; how he knows that micro-organisms cannot penetrate the capillary walls to enter the lymph spaces, subcutaneous or otherwise, where he says anti-body formation occurs. We have much evidence to convince us that bacteria can penetrate through the capillary walls into the lymph spaces, for we know the pneumococcus causes meningitis, the tubercle bacillus causes meningitis and peritonitis and synovitis, and the gonococcus causes synovitis. The only fluid whose direction of flow is such that it might carry these germs from their usual foci to the lymph spaces is the arterial blood and they cannot enter the lymph spaces from the arteries without penetrating the vessel walls. W. M. Crofton, Lecturer in Special Pathology in the University College, Dublin, stated the case more plausibly. He said—"In order to have vaccine therapy efficient the patient's tissues must be capable of responding to a further stimulus. It is remarkable and would appear, a priori, impossible that in such acute generalized infections as typhoid fever, where the micro-organisms are circulating in the blood, the patient's tissues would be capable of reacting, and yet such is the case. The same is true of other acute diseases, such as pneumonia and puerperal septicaemia. I have suggested that, for instance, in typhoid fever, where the microbes are in circulation, many of the tissues are protected to a large extent from the microbes and their poisons by the endothelial cells of the capillaries, the efficiency of which as phagocytes is well known; and so when the vaccine is put into the subcutaneous tissue, one gets behind them into tissues capable of further response" (*Lancet*, April 4, 1914). On the basis of this theory some advocate the injection of vaccine into the subcutaneous tissue rather than the muscle or the vein and never twice in the same place. Dr. Simon Flexner probably covered all that is known regarding the unequal distribution of immunity in the following—"Our knowledge of the quantity of immunity principles present in the lymphatic fluids as compared with the blood in the same individual is still imperfect" (*Jour. A. M. A.*, 1913, Nov. 22). Among scientists we have then a very general agreement against vaccine treatment of septicaemia. However,



if clinical observations showed results definitely better than those obtained by established methods of treatment we would still be justified in using vaccines in these cases.

The most favorable clinical report which I have found on vaccine treatment of any septicaemia was made by Krumbhaar and Richardson of Philadelphia in September, 1914, (*Penn. Med. J.*, January, 1915). They reported 93 cases of typhoid fever treated with vaccine by themselves and combined them in a table with 1,713 other cases similarly treated by 37 other men, the number reported by any individual varying from 1 to 460. In this series of 1,806 cases the deaths were 5.4-10 per cent., and the relapses 48.5-100 per cent. In their own series of 93 cases Krumbhaar and Richardson report 5.4-10 per cent. of deaths, 64.5-100 per cent. of relapses, and 18.3-10 per cent. of complications. In 170 control cases not treated by vaccines, they report 8.2-10 per cent. of deaths, 35-10 per cent. of relapses, and 14.1-10 per cent. of complications. They also report an average duration for the vaccinated cases of 25 days and for the unvaccinated of 34 days. The differences in these figures are not greater than commonly appear in statistical studies of typhoid fever under ordinary methods of treatment. Evidently both theory and clinical experience fail to justify the use of vaccines in general infections.

Vaccine treatment of local and chronic diseases has met with varying success. While there have been some wonderful results yet on the whole it has been rather disappointing. Failures have been conspicuous, possibly because of error in detection of the etiological germ, or error in size and frequency of dosage, or failure to establish and maintain good blood flow in the lesions, or failure to improve the general condition. Error in diagnosis of the etiological micro-organism is due usually to failure to take a culture. This omission can often be laid at the door of stock vaccines, the use of which tends toward snap diagnosis of the causative factors. Sometimes the etiological germ fails to grow because it has previously died out, or because it has been overwhelmed in the culture by complicating organisms, or because it grows with great difficulty on the medium which happens to be used or because the culture was not taken from the right spot. Even with all possible care a wrong vaccine may be produced. Errors in size and frequency of dosage develop usually when the clinician loses touch with the bacteriologist and attempts to go it alone. The initial dose varies, for the virulence of strains and the susceptibility of individuals vary. It surely should be small enough so that no reaction is produced. The more acute the case, the smaller the initial dose and the more gradual the increases. It takes time to produce anti-bodies

and for the first day or two after an injection the patient's body has not yet recovered from the assault of the vaccine. It is said to be in a negative phase. If too much is given or if the next dose comes before the succeeding positive phase is well established the patient's depression will be increased and real harm may be done. A dose which is followed in one or two days by aggravation of the clinical signs and fever is too large and should be diminished. If no effect the dose is too small and should be increased. If followed by improvement in signs and temperature the dose is efficient and should be repeated as long as it produces good results. Succeeding doses should be administered about every five days, but the interval should always be long enough for the disappearance of all effects of the preceding dose except induration and tenderness at the site of the injection. Vaccine treatment, even if it would be effective, is evidently too slow for many acute infections, such as colds, pneumonia, etc. Local circulation may be improved by general tonic treatment, by relief of pressure through incision and drainage, by improved drainage through Bier's hyperaemia or the sodium chloride-sodium citrate wet dressing, by the local application of heat, by massage and by other local stimulants. Improvement of the general condition implies not only attention to striking abnormalities like diabetes, but also to indigestion, anaemia, sleeplessness, exhaustion, etc. Carriers harbor pathogenic germs for indefinite periods but do not become sick until something breaks down or rearranges their immunity. Most of us are pneumococcus carriers, many are diphtheria carriers, some are typhoid carriers and so on. Often the immunity of the body is so high that the mere presence of pathogenic organisms is not sufficient to produce disease. But when fatigue in some form modifies the immunity, disease results. Evidently general condition is often the determining factor and it is not strange that vaccines alone fail to cure. The most conspicuous successes have occurred in acne and other skin infections, boils, chronic gonorrhoea (especially arthritis) and various discharging lesions, such as chronic otitis media, sinusitis, empyema, local puerperal sepsis and chronic mucous membrane inflammations. Tuberculin treatment is of doubtful value. Vaccine treatment of whooping cough and erysipelas is still in the experimental stage. Streptococcus vaccine for the prevention or treatment of scarlet fever is probably aimed at a complicating and not at the etiological factor, and in any event such treatment is still experimental. Even if correct in principle the short time of incubation in scarlet fever would probably be insufficient for prophylactic

immunization by vaccines if begun after exposure. Vaccine treatment of the various conditions grouped under the name rheumatism is a discredit to our profession. We do not yet know the etiological organisms if there be any, nor is it probable that a single organism causes all the types of arthritis which we in our ignorance classify together. We doubtless would hear very little of this treatment were it not for persistent advertising by those who have vaccines for sale. The artificial craze for vaccines, caused largely by advertising, has resulted in much unscientific treatment. Most doctors are much better equipped to administer drugs than vaccines. The use of stock vaccines should be limited to prophylaxis and those few intractable cases in which one is reasonably sure of the etiological organisms but cannot obtain a culture; tuberculosis and chronic gonorrhoea are examples. In all other cases a culture should be taken and an autogenous vaccine prepared. A mistaken notion that this method is expensive has kept some men from adopting it. An autogenous vaccine in any reasonable quantity costs \$5.00. Stock vaccines cost 25 cents per dose, and upwards. There is little choice in price but much in desirability. The use of mixed vaccines is justified only when the mixture is that which exists in the patient and not always then. Polypharmacy is worse in vaccine than in drug treatment for we know vaccines as used are sometimes harmful. The old habit of prescribing secret proprietary medicines is gradually being overcome. In the light of this fact it is surprising that so much use has been made of those hopelessly unscientific shot-gun preparations called phylacogens, which are in addition secret remedies. Times are changing. People are demanding more and more that doctors be efficient and accurate. They want us to understand what we do and stop when we are ignorant. They are justified in their demands. I am reminded of a letter in a recent issue of a daily paper, protesting against compulsory vaccination. It said in part—"This vaccination business is getting quite numerous. It is vaccination for tuberculosis, rheumatism, smallpox, diphtheria, scarlet fever, typhoid fever and I know not what all." Clearly vaccines should be used but not abused. Then they will be welcomed by the community.

In conclusion—vaccine treatment, when employed, should be in addition to and not in place of the ordinary methods of treatment. It has been well said that vaccines are invaluable adjuncts in the medical and surgical treatment of bacterial infections but very poor substitutes for either.

## THE INFECTED COLON AND ITS SURGICAL THERAPY.\*†

Studies from the Clinic of Gastro-Intestinal and Rectal Surgery of the N. Y. Polyclinic Medical School and Hospital, and from the Laboratory of Physiological Surgery of the N. Y. University Medical School.

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Bouchard, after Claud Bernard, gave added impetus to the study of auto-intoxication. Roger Metchnikoff and Combe working along somewhat divergent lines, have made our knowledge of this interesting symptom-complex more complete. Adami, after reviewing this earlier work in collaboration with his own extensive studies, concluded that the process should be properly considered a subinfection of bacterial origin. Combe believed that the origin of the toxemia was to be found in the bacterial hydrolysis of the proteids. Metchnikoff was also inclined to this view and most of the present-day therapeutics is based upon this conception. His idea is that the proteolytic anaerobic bacteria are the toxic agents.—these thrive best in the alkaline secretion of the cecum and ceco-colon. The reaction of the ileum being acid, is taken to explain the fact that these bacteria are seldom found there save under pathological conditions. Under this hypothesis originated the sour milk, lactic and succinic acid treatments.

From a surgical standpoint it is necessary to include under auto-intoxication, not alone the lesions caused by the substances formed through the vital processes of the organism, which is Combe's conception, but also those arising from destructive infection of the bowel wall, which in a sense is not true auto-intoxication but which is essentially a surgical disease. Surgeons can at present do no better than find a means to prevent the absorption of the toxins from a given part of the bowel, however these poisons may have been created. Thus, we limit ourselves here to a consideration of partial obstructions by whatsoever cause, and of colonic infections which are destructive or inhibitory of its normal functions, particularly those functions which protect the body from infection through it. This amounts to nothing more than a conservative extension of surgical therapeutics to the colon. Does it not seem logical to apply the same surgical principles to the colon as to other organs? Most acute and chronic purulent colonic infections are surgical from the start, and the future

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† This paper is not a plea for either so-called surgical or medical therapeutics, but a simple chronicle of certain facts which the authors have obtained through experimentation on animals; through laboratory studies on human material; and from clinical results.

functional efficiency of the organ and of the individual depends upon early recognition and proper treatment.

The colon is pouched at either end, and its entrance and exit are guarded by valves. It is widest at the cecum and narrowest at the rectum. Four angulations give to this organ potent pathological possibilities. Three gross features distinguish it from the small gut: first, the teniae; second, the appendices; third, the haustrae. Not being a highly specialized organ, the colon is subject by the laws of heredity to great variations both of size and of position, specialization results in a rigid adherence to a fixed form. The greatest variations are seen, as would be expected in the cecum and sigmoid. Microscopically, except at the apex of the cecum, the most important surgical consideration is the relative scarcity of lymphatics and the absence of villi. This suggests what has lately been proven: that the digestive function of this organ is nil. Auerbach's plexus has recently come to be of great surgical importance because of our increasing surgical interpretation of the function of the autonomic system. The terminal ileum, the appendix, the cecum and colon have a common origin. This has an important bearing upon surgical physiology. Obviously, the entire alimentary canal is ill adapted to the gravity strain incident to the upright positions, even when the support and the torsal development have been most favorable.\* A consideration, therefore, of the biological forces constantly at work is of great interest to the diagnostician and to the operating surgeon. Hereditary tendencies resident in the germinal material itself, lasting throughout life, and those imposed by the peculiar conditions of man's environment, combine to yield a high percentage of ill adapted ceco-colons. Bryant has shown that a herbivorous and carnivorous classification of human disease is possible, and it is evident that in no part of the body is this more true than in the ceco-colon. Man's cecum is normally carnivorous in type.

There are three deviations from the normal course of enteric development which are of great surgical interest. Rotation may fail; fixation may fail; the cecum may conform to the ancient herbivorous type. Any or all of these variants may, under pressure of gravity, produce areas of dilatation and atonicity which result in a slowing of the intestinal current frequently ending in infection. Is it not easy to see that, given a cecum of this ill-adapted, pseudo-herbivorous type, it may undergo changes in the following sequence: stagnation, gas formation, dilatation, attenuation, infection, destruction of Auerbach's plexus? Barber has shown in recent animal experiments the important difference in the character and location of the dilatation following par-

tial and complete obstruction. In brief, partial obstruction of the colon caused dilatation of the duodenum only, while complete obstruction caused contraction of that organ and colonic dilatation just oral to the obstruction. An analogy may be drawn between this process and that which destroys so many gall bladders and appendices. The difference is that we have come to a recognition of the one, but not, as yet, of the other.

Bloodgood has observed a vast difference in the post-operative behavior of his colonic cancer cases and those in which the colon has been resected for other causes. There was a rapid restoration of function in the cancer cases, but when the colon was resected for other causes, the return of function was slow and often incomplete. These observations accord with our own, and we consider the following to be a possible explanation.

The earliest sign of cancer is constipation. This occurs irrespective of the size of the growth or of its encroachment upon the gut lumen. It is equally true of laterally implanted growths, as of the annular types. It is next to impossible, either by catharsis or enemata, to empty the bowel of the fecal mass which accumulates in the dilated pouch just oral to the growth. We have confirmed these observations repeatedly, especially in the case of minute recurrences which could not possibly in themselves offer any excuse for mechanical obstruction, the bowels having been regular since the primary resection and up to a short period before the recurrence. This inhibition is perhaps associated with Nature's effort to cause a recession of the growth. It is common practice to associate diarrhea with a new growth, but, of course, diarrhea is no evidence of the absence of constipation, for paradoxical as it may seem, the diarrheas most persistent are those associated with constipation. This frequent and imperative desire to defecate is not properly a diarrhea but a mere subjective reflex without objective basis. So often, a diarrhea of this kind is mistaken clinically and so closely may it appear to be allied to the inflammatory conditions of the colon that one cannot consider the true inflammations without mentioning malignancy. We think it would be well to confirm or disprove our findings, and then let it be generally recognized, if confirmed, that often the earliest clinical sign of cancer is a relatively sudden constipation.

Infections of the colon vary from a mild catarrhal inflammation of the most severe involvement of the entire wall and the sero-peritoneal fat. While as yet we can offer no conclusive evidence upon which to base a rigid classification of colonic infections, it is evident, clinically, that there is wide variation in the course pursued by the infection, in its position, its virulence, and its outcome. Some infections,

\* Shaler considers that the upright position more than any other single factor has fixed the short limits of man's life.

and these are frequently seen in the infantile or fetal type of cecum, are confined more or less closely to the cecum and ceco-colon. This may be because of the direct continuance here of the cecal and appendicular walls. Of this interesting relationship there is no direct proof, but a further series of observations might prove this hypothesis, namely that the ceco-colonic infection was primarily of appendicular origin. In discussing the origin of colonic infection, our laboratory colleague, Dr. McFarland, suggested that the hematogenous path of infection was deserving of careful consideration. The virulence is to be measured in terms of physical and mental systematic disturbance rather than in the amount of blood and mucus in the stools. Here, as elsewhere, the streptococcal infections are most serious, although in a woman who was completely disabled, mentally and physically, we have isolated a pure culture of colon bacillus from a gland found in the cecal mesentery.

In our studies we have noted that colonic infection appears to bear a measurable ratio to the degree of the morphological variation from the normal occurring in the organ or in its mesentery. Furthermore, of the thirteen ceca removed and studied microscopically and found diseased as per the following reports all showed inflammatory change. Of all the other cases in which developmental reconstruction was not done but rather a simple colostomy or ileostomy not one organ conformed to what is considered anatomically normal. The outcome of colonic infection is most interesting because of an apparent paradox. The virulence of the infection is no index of the degree of subsequent strictural deformity. The infections which usually result in stricture are comparatively mild. We have seen very severe streptococcal infections leave no deformity whatever. Case 259, a railroad engineer. Clinically mild infection; passing blood and mucus, but able throughout to run his engine. Proctoscope showed a colon inflamed in spots, which bled easily on the slightest touch; covered with muco-serum. No ulcers whatever. Sick for six years. Gradual narrowing of descending colon to complete obstruction under medical and incomplete surgical treatment. Cured by exclusion of descending colon which is permanently destroyed. Case 254 a young society woman. Severe constitutional symptoms. Proctoscope showed a sero-purulent exudate and some ulceration. Microscopic examination of colon revealed an acute hemorrhagic purulent inflammation of all coats including peritoneum and adjacent fat precisely like that of carbolic or arsenical poisoning. The streptococcus viridans was recovered from the discharges. Nevertheless, after appropriate surgical treatment, although she had been medically treated for a year and a half previously without improvement, she has gained

thirty-five pounds and, clinically, the bowel is functionally perfect. These represent the end results of two extremes of colonic infection, and many cases approaching the mean, serve equally to support the hypothesis stated above.

The general indications for surgical intervention are to be sought and found only after a most exhaustive study of each individual patient. First to be considered are the grossly evident colonic lesions. Rare, but prominent among these in point of importance is hemorrhagic colitis. This embraces the following conditions. Acute streptococcal embolic septic colitis; chronic torpid ulcerous, slowly progressive colitis; acute diphtheroid hemorrhagic colitis. These forms of colitis yield only to surgical therapeutics. It is evident that no good purpose can be served by partial removal, because the colon is, as a rule, diseased from the ileocecal valve to the anus, and no one would here think of extirpation.

It is a curious fact and well worthy of note, that the infections terminate abruptly at the ileocecal valve. This occurs in spite of the change in reaction from alkaline to acid. Such an hypothesis is supported by the fact that since the terminal ileum and the ceco-colon have a common embryologic origin one would naturally expect them to be susceptible to like infections. For it is undoubtedly true of the ileocecal valve as has been proven true of the uretero-vesical, that its power of preventing so-called ascending infection is almost nil, the physiologic function of the ureter being paramount. Our clinical observations on the Bauhinian valve all tend to show that this is equally true of the gut, for ileac involvement is extremely rare except the gut functions be impaired by bands or adhesions, and quite irrespective of the valvular patency. This view is at variance with that of those surgeons who operate for the sake of restoring the valve. Further research here is evidently necessary. Thus, it appears to the essayists to be as yet an open question whether the immunity from infection enjoyed by the terminal ileum, though it be the embryological analogue of the ceco-colon, is due to the change in chemical reaction, or, as with the ureter, to a protection afforded by its unimpaired physiologic function.

Whatever the cause of so called hemorrhagic colitis, one thing is certain: though the clinical pictures may be almost identical, the histological findings differ. Undoubtedly, the infections must be as varied as the microscopic pictures. Bacteriologists are helpless to aid the clinician in reaching a specific basis for classification, and until they find it possible to interpret the clinical findings in a scientific manner we cannot hope to reach a satisfactory classification, nor can we hope to treat these cases in any way other than by operation.

The histological findings in support of our premise are as follows:

The first case shows acute inflammation from the mucosa to the peritoneum. No desquamation of epithelium or destruction of glands. Submucosa shows both acute and chronic inflammation. The muscularis in some places is normal and in others chronically inflamed with entire absence of nerve tissue. The discharges in this case are foul smelling and dark brown. The peritoneal gut is much thickened and appears in the form of a dense fibrocellular membrane which is only loosely attached to the muscle. The appendix is the seat of acute purulent inflammation. The mucosa shows leucocytic exudate with blood and pus.

In the second case the mucosa differs in that it is very deeply congested and has the appearance of the mucosa of carbolic acid or arsenic poisoning. In all sections in this case the entire mucosa is covered by exudate and presents a picture of intense inflammation. The blood vessels are greatly distended, but there is no evidence of degeneration of epithelium. The submucosa exhibits both acute and chronic inflammation here, also blood vessels are dilated and engorged with blood. The musculature shows some process of acute inflammation and the blood vessels are engorged with leucocytes. There is exudate scattered through the submucosa. Tubercles can be demonstrated, but are not of tuberculous origin. There are several giant cells. A careful study of the nerve tissue fails to give any evidence of participation in the inflammatory process. The musculature shows evidence of acute inflammation and the peritoneum form a dense fibro-cellular membrane which is inherent to the muscle.

The third case presents exudate throughout, but most marked in the mucous peritoneal coats. The crypts of Lieberkuhn have been entirely replaced by a round cell exudate. Blood vessels are abundant and engorged with blood. They are very numerous on the free surface of the mucosa. Apparently there is total absence of submucosa, in consequence of which the exudate layer replacing the mucosa rests directly on the inner muscular coat. There is round cell infiltration of the muscular coat. There is no change in the peritoneum in this case.

Having considered the hemorrhagic form in a special manner, because of its severity, rarity, high mortality and its exceptional import to surgery, we turn to the more frequent infections, local and general. There are all grades of infection varying from very severe to mild. Some are merely catarrhal manifestations of direct extensions. Note the colitis from adventitious bands, from recurrent injury by floating kidney, and from contiguous pus tubes and gall bladders. Case 487, a woman of 49. Abdominal tumor removed nine years ago. General complaint, pain, loss of strength during the last five years. Secondary complaint, constipation, alternating

with diarrhea. Medical treatment futile. Operation, meso-ventrad incision, showed omentum thickened, twisted upon itself, and rotated from right to left so as to produce a partial hour-glass stomach and a triple kinked and twisted mid-transverse colon. It is well shown in the color photograph. Cessation of symptoms since operation one year ago. It is surprising how slight the physical basis may be in order to cause a disability out of all proportion to it. The following case is illustrative. Case 362 constant diarrhea, blood, mucous and tenesmus. Nausea and gastric symptoms so marked as to have deceived a very prominent stomach specialist who considered the lesion to be gastric ulcer, and who treated it as such for several years. Cured by the simple removal of a polypus from the sigmoid.

Time will not permit us to consider tuberculosis, diverticulitis and many other constitutional and congenital conditions. Suffice to say that all may require surgical treatment, the technic and details of which are well known.

We wish to emphasize here particularly the surgical therapeutics of certain *special* forms of colitis which have given brilliant results in our hands and which we believe are not in general use. This therapy depends upon the following simple axioms. *A stoma situated anywhere but oral to all the inflammation is worse than useless. Colonic resection, to succeed, must be based upon surgical physiology.* Thus, the therapy under discussion consists in providing for one class of cases, rest; for the other, resection. A differential diagnosis to determine in what class a given case will fall may be established as follows:

What are the indications for ileostomy; what for colostomy; and what for resection? Acute purulent hemorrhagic and the acute purulent inflammations of the colon differ in this respect: The first is usually a general infection of the entire colon and rectum, ending in death under ordinary treatment. The second may be local or general but it differs from the first in that it seldom reaches as deep as the peritoneal coat. In the first prostration is profound, temperature high and irregular, and the anæmia is severe and progressive. The discharges have a particularly foul odor, and the pain is cramp-like. There is no condition in the whole range of surgery more certain to yield to brilliant result if ileostomy is done in time. Appendicostomy and cecostomy will not cure; they are inadequate and are contra-indicated because unphysiological. Their use in this type of case is unwarranted.

Another rare condition previously treated by irrigations and medication and occasionally by colostomy, is multiple polyposis. Ileostomy is the proper therapy. This lesion we believe to be secondary to an infection and the histological findings tend to support this view.

Case 180. Diarrhea alternating with constipation. Abdominal pain and tenderness. Frequent mucous and blood in stools. Illness.

began in summer of 1900 and from that time up to May 1912 the patient had acute exacerbations with intervals of freedom. Bowel was studded with growths varying in size from small pimples to those three-quarters of an inch in length and one-half inch in diameter. They were so thick that it would be almost impossible to put the finger on the bowel without touching one. Mucous membrane granular in appearance and inflamed and covered with pus. Operation in May 1912, ileostomy. Following this, appetite improved and patient was able to eat anything without discomfort. Gradual gain in weight from 137 pounds at time of operation to 152 pounds one year later. At present (1915) weighs about 160 pounds. When last seen the bowel was normal and there was no presence of any of the growths, mucous, or blood.

Case 254. Chief complaint, epigastric, pain, heart burn, diarrhea, foul smelling, dark brown discharge. Ileostomy and subsequent gain of thirty-five pounds. Patient danced all one winter with ileostomy opening and none of her friends suspected its existence. A year and a half after operation, cured. About six months have elapsed since opening was closed. Since then several examinations have been made for occult blood and the report has been negative on each occasion.

The causative relationship of infection to polyposis is further supported by the fact that after ileostomy the inflammation subsided and the tumors disappeared.

The third colonic lesion to which we have given special attention is a local infection of the ceco-colon, a typhlo-colitis, not extending far beyond the hepatic flexure, and giving systemic symptoms of profound auto-intoxication. These cover a wide field of human ailments and are familiar to all.

The indications for laparotomy in cases not yielding to colonic vaccines and other suitable forms of medical therapeutics as described by Satterlee, are chronic intractable constipation or diarrhea plus the characteristic mental lesions, together with x-ray findings and often with snow crepitation over the cecum.

Resection is indicated if a non-fused, inflamed, thickened, dilated, infected cecum, often with a mesentery studded with enlarged lymphatic glands, is found. As yet we have not been able to decide positively upon resection until after laparotomy. As resection is a vague term, not indicative of any particular technic, we have suggested the term developmental reconstruction in a previous paper.\* This embodies the resection en masse of the terminal ileum, appendix, and ceco-colon to the region of the middle colic artery. When completed, it places the ileocolic juncture in the position oc-

cupied before birth, which is the adult position in the dog and may, therefore, be termed "developmental." This operation carries a mortality which is far from negligible and has been practiced by us only on individuals who have had years of unremitting, unavailing medical treatment and who were in every way unfit. Of a series of thirteen, 23.1 per cent. died; 46.2 per cent. were cured; 23.1 per cent. improved; and 7.7 per cent. not improved.

We have made several observations during the post-operative history following reconstruction, which have been of value to us and may be worthy of record. The first is, that reaction is apt to be severe in proportion to the amount of handling in the neighborhood of the second portion of the duodenum. We have, therefore, recently taken great pains to avoid this, considering that it may have something to do with the sympathetic ganglion and plexus known to exist there. Another observation is that reaction, if present, is apt to be delayed until after the fiftieth hour. Still another is that at least one among our cured cases was unquestionably saved through the administration of autogenous vaccine by Dr. Satterlee.

We never use saline in the rectum, first, because it is contrary to the laws of osmosis; second, because the salt increases the patient's thirst; and third, because there may be a considerable toxic element in so large an amount of sodium chloride. We give forty to sixty drops per minute of tap water by rectum after the patient is returned to bed and continue, as toleration may permit throughout the first week. We are convinced by experience that the rate of absorption of tap water is so rapid that no possible danger can exist from its use, and this is further supported by the experimental fact that the colonic wound is normally sealed within two hours from its closure.

The post-operative care following ileostomy or colostomy is exceedingly important. It means comfort or discomfort to the patient. In the first place, if possible, the bowel loop should not be opened until the fourth or fifth day after operation. The efficiency of a colostomy is to a great extent dependent on primary union of the wound; if this fails the patient may have a hernia superimposed on the colostomy, and this means discomfort and inefficiency. On account of cramp-like pains and accumulation of gas, the patient is often so uncomfortable that it is imperative to open the bowel by some method in order to afford relief. On more than one occasion we have accomplished this by passing a small trocar and cannula and allowing the gas to pass out in this way. We have occasionally used a small number ten or eleven French catheter, and closed the bowel with a purse-string suture. This at times is very satisfactory. There is one important feature connected with ileostomy which we have

\* See bibliography.

learned, and that is to anchor the ileum to the abdominal wall about ten centimeters oral to the proposed stoma. This prevents prolapse and inconvenience; also prevents buckling against the other side of the bowel and permits it to pass into the cecum. The proper care of the skin and provision for enteric drainage are points not to be overlooked. An ointment of zinc oxide, having for its base lanolin, should be applied to the skin for a radius of about five centimeters from the stoma all around; over this some fine starch powder should be dusted. A collar of two or three thicknesses of gauze will serve further to protect the parts. A bag with the rubber container at right angles to the collar, such as is made by Tiemann and modified by Dr. Treby Lyon, one of our associates, serves as an emergency receptacle in case of leakage. This, however, is not to be expected, at any rate, after the new function has been established. The use of a receptacle is not always necessary following a colostomy, but it is imperative following an ileostomy.

Although the readjustment of physiological balance after ileostomy, particularly in relation to the absorption of water, may take place slowly, it has come in due season in all of our cases. The stoma is not so efficient as after colostomy, but this is largely compensated for by the stick-like character of the movements and by complete absence of gas of fecal odor. We wish to emphasize what we have already published, that the fear of post-operative discomfort both from colostomy and ileostomy is grossly exaggerated.

In conclusion; the most careful differentiation of all colonic inflammations is necessary, not alone as to character, so far as that be possible, but particularly as to distribution. Some infections are general, others segmental; the therapeutic rests largely upon this, an ileostomy being indicated for the one, a colostomy or a developmental reconstruction for the other. Many segmental infections, unless surgically treated, even though relieved and apparently cured by medical treatment, invariably relapse. Cessation of symptoms for a time does not mean cure. Such infections almost invariably end in stricture, so its preventive treatment is the early recognition and surgical treatment of the cause. Whatever the nature of the primary infection, it always becomes mixed after a short time. This principle underlies the therapy of the colon just as thoroughly as it does that of the lungs.

Heredity and the upright position play important parts in colonic pathology and a sympathetic recognition of man's place in Nature is an important step in directing colonic therapy.

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#### GLIOMA OF THE SPINAL CORD.

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THE writer believes that tumors of the spinal cord are more common than is generally supposed. The present case is reported for the purpose of drawing the attention of the general practitioner to a particular type of tumor which when diagnosed early gives an opportunity for surgical intervention to effect a rapid restoration of the affected individual to health.

*History.*—L. K., female, age forty, was seen by me April 3, 1914, at her home. Her chief complaint was pain in the left lower quadrant of the abdomen and in the back. The pain over the left lower quadrant had been present for one year; it had begun insidiously and was steady and grinding in character. There was also pain across the epigastric region in the morning; this was a cramp-like sensation and had become so severe that the patient had not been able to walk for some months. There was a sensation of sand in both soles. The pain in the back was indefinite. There was burning in the urethra on urination. The patient gets up once at night to urinate. There was some loss in weight. The bowels were constipated. The menstrual function had been somewhat irregular. There was no previous history of illness or injury, nor was there any family history of chronic disease. Physical examination showed a middle aged woman with flabby muscles, the abdominal muscles particularly being very flaccid. No points of tenderness and no masses palpable in the abdomen. Patella reflexes were absent; patient was unable to walk. There was disassociative anesthesia to the level of the xiphoid, this disassociative anesthesia indicating an intraspinal cord lesion.

The patient was admitted to the German Hospital April 5, 1914, hospital number 28548. At my request she was seen by Dr. William Browning who agreed in the diagnosis and located the lesion as probably in the sixth dorsal segment. Radiographic examination did not show any bony deformity. Spinal puncture showed clear fluid, with 60 per cent of polynuclears and 40 per cent lymphocytes. Wassermann negative; urine analysis negative. Blood examination: hemoglobin, 80 per cent; red blood cells, 3,980,000; white blood cells, 6,500; polynuclears, 69 per cent; lymphocytes, 31 per cent.

Operation April 14, 1914. An incision was made over the second dorsal to seventh dorsal spine directly over the spinous processes. The patient was in the prone position and the dorsal region elevated. This incision was carried down on each side of the spinous processes exposing them thoroughly. The resulting cavity was packed for several minutes to control hemorrhage. The spinous processes were removed from the third, fourth, fifth, sixth and seventh dorsal and the laminae from the fifth, sixth and seventh. The dura was somewhat tense, otherwise, normal. The dura was opened in the middle line longitudinally and immediately there was exposed a tumor in the sixth dorsal segment lying mostly to the right side. This tumor was bluish-black, about the size and shape of a grape. Several nerve filaments overlay it. As we watched, it slowly extruded itself from the spinal elements until about one-half of it lay on the surface of the cord. There was during this time the escape of but a small amount of cerebro-spinal fluid owing to the elevation of the parts. The nerve filaments overlying the tumor were very gently pushed aside and the tumor picked up with forceps. Owing to its thin and gelatinous nature the tumor was removed in several pieces; a few small shreds of the tumor clung to the spinal cord. These were removed by gently rubbing with a small pledget of wet gauze. The dura was closed with a continuous suture of fine plain catgut; the overlying muscles were brought together with interrupted sutures of plain cat-



gut. A green silk protective drain was led out of the lower angle of the wound. The skin was closed with paraffin silk. The patient left the table with no apparent shock. Microscopical report: Glioma.

*After Course.*—There was no rise of temperature following the operation. The drain was removed in forty-eight hours; there was but slight discharge. Skin sutures were removed on the seventh day; primary union (Fig. 1). For the first twelve days the patient was very restless, complained of considerable pain and was noisy at times. From April 24th to 30th there was complaint of considerable pain in the lower limbs; there was involuntary defecation until April 20th, and involuntary urination until April 26th. The patient was up in bed on the fifth day, out of bed on the eighth day. From the fourteenth day on electricity was applied to both lower limbs for ten minutes daily and massage given. Sixteen days after operation the areas of anesthesia had completely disappeared; sensation in the abdomen and lower extremities normal, with pin and heat and cold test; the left patella reflex became normal; the right patella reflex was slightly exaggerated. Twenty days after operation the patient walked a few steps and eight days later walked frequently. She was discharged on the forty-first day walking unassisted and showing no spasticity.

From time to time since up to the present, March 10, 1915, she has presented herself in my office; she has gained in weight and strength and performs all her duties. She walks up and





down stairs in a natural manner (Fig. 2, 3 and 4). From time to time there has been some pain in the epigastrium and the sensation of sand on the soles of the feet has persisted, otherwise she has been normal.



## IMMUNIZATION AGAINST MEASLES.\*

By CHARLES HERRMAN, M.D.,  
NEW YORK CITY.

**A**LTHOUGH the mortality from measles has been somewhat reduced, the morbidity remains as high as ever. On several occasions I have stated that this high morbidity could only be distinctly diminished by immunization against this disease. For several years I have had a method in mind, but it was only about two years ago that I gathered courage to test the method. For the sake of convenience I shall divide the discussion of the subject into:

1. Is it worth while?
2. Important facts bearing on the problem.
3. Some theoretical considerations.
4. The method of immunization and its results.

1. From 1900 to 1910 in the registration area of the United States 44,080 deaths from measles were recorded. In 1910, 6,598. In 1913, in New York State, 1,075 deaths were caused by this disease. In New York City, during the ten years from 1903 to 1912, the average number of deaths annually was, from measles 957, scarlet fever 939, whooping cough 393. In 1913, 628 deaths were due to measles, 507 to scarlet fever, and 420 to whooping cough. These figures, however, do not represent the entire mortality, for many patients die of complications and their deaths are recorded as due to these complications. In New York City about 30,000 cases of measles are reported annually, but as many patients have no attending physician and as some physicians fail to report all their cases, a conservative estimate would place the real number at about 60,000. This disease is therefore important on account of the large number of persons affected; 95 per cent of the entire population are infected at some time during their life. Add to the large number of deaths the complications and sequelæ, pneumonia, otitis, adenitis, and tuberculosis, which often cause permanent injury, and I believe all will agree that the subject deserves serious attention.

2. Infants under five months are relatively immune to measles. This immunity is striking, because practically all other children who come in intimate contact with a case contract the disease. In the rare instances in which they *are* infected, the disease appears in a mild atypical form. This may explain the apparent difference of opinion. For example, Sperk observed a certain number of cases under five months in the infant wards of the hospital. These were not healthy infants; in many instances the manifestations were so slight that they would have been entirely overlooked if the patients had not been under constant and careful observation, and if there had not been an epidemic of measles in the hospital at the time. All observers agree that under two months infants are absolutely immune. It is interesting to note that in countries in which the

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 28, 1915.

disease is not endemic, in which the mothers have not had the disease or have it during pregnancy, the infants are not immune during the first five months. There is apparently no great difference in the degree of immunity between breast fed and artificially fed infants.

When infants of six or seven months contract the disease it usually appears in a mild form, indicating that the immunity becomes less marked toward the end of the first year, for during the second year it is entirely absent and it is at this age that the disease causes the greatest number of deaths.

Infants under five months who have been in intimate contact with a case of measles and have not been infected, frequently do not contract the disease when exposed later. Five such cases have come under my observation:

J. F. when he was 4 months old came in intimate contact with his brother who had measles and was not infected. When he was  $3\frac{1}{2}$  years a baby sister of 11 months had the disease and he did not contract it. W. W. exposed at 4 months and did not contract at 5 years. A. S. exposed at 3 months and did not contract at 3 years. R. T. exposed at 3 months and did not contract at 4 years.

I have recently had under observation a case of measles in a family the history of which is most instructive in this connection. There are seven children, age 14, 12, 10, 8,  $6\frac{1}{4}$ ,  $4\frac{1}{2}$ , and 10 months. The oldest child had measles  $11\frac{3}{4}$  years ago. The second child was about  $3\frac{1}{2}$  months of age at the time and did not contract the disease. The third and the fourth children had measles six years ago. The second, though exposed, did not contract it; neither did the fifth child, who was then three months of age. The sixth child had measles two years ago, and again the second and the fifth were not infected. The seventh and youngest child I recently observed in an attack of measles and again the second and the fifth child remained free.

Swoboda, in a discussion on measles (*Jahrb. f. Kinderh.* 80, p. 337), mentions the case of three sisters (women) who had measles and all of whose children contracted the disease except an infant of four months which was nursed by the mother while she was sick. The child at six years had not yet had the disease.

One attack of measles usually protects for life. Exceptions to this rule occur but they are rare. In the majority of cases such a supposed second attack is based on an incorrect diagnosis.

3. The immunity which the infant enjoys cannot be transferred by the mother through the breast milk, for as the figures given in a previous paper (*Arch. Pediat.*, Dec., 1914) show, artificially fed infants are also immune. It seems most probable that the immunity is conveyed through the placental circulation; however, it is not impossible that the infant elaborates its own antibodies. In this connection it may be worth

noting that recent investigation (Groer) has shown that the characteristics of the antitoxin present in persons who have never had diphtheria (as found in the new-born) are identical with those due to immunization.

The experimental work of Hektoen, Anderson, Goldberger and others on human beings and monkeys has shown that the blood and the nasal and oral secretions of patients suffering from measles contain the infectious agent from 24 hours preceding to 24 hours following the appearance of the eruption. It is a filterable virus, but in Anderson's and Goldberger's experiments only a small percentage of the inoculated monkeys were infected by the filtrate. The infectious agent loses its virulence when kept more than 24 hours.

To recapitulate: One attack of measles usually protects for life. Infants under five months are relatively immune. The nasal discharge contains the virus 24 hours before the appearance of the eruption.

It has long been the custom to intentionally expose children to infection with measles so that it would be over and done with, as they were almost certain to contract it sooner or later. Had this custom been attended with great danger we may be sure that it would have been long since abandoned. The real danger in this procedure lay in the uncontrolled selection of patients. In infants between the ages of one and two years, in weak, poorly nourished infants, or in children who were predisposed to tuberculosis such a procedure would be absolutely unjustifiable.

Having convinced myself from a very large number of personal observations that infants under five months of age were relatively immune, I obtained the consent of a mother to inoculate her infant then four months old, explaining that the object was to render it immune against measles in the same way that vaccination protected against smallpox. It seemed fair to assume that as the infant at that age was not absolutely immune, direct inoculation would convert a temporary into a more or less permanent immunity. The child was carefully observed and at no time did it present any evidence of injury. I then proceeded cautiously to immunize others, and in no case was any unfavorable symptom noted. The material for inoculation was obtained from otherwise healthy children, taken 24 hours before the measles eruption appeared. For obvious reasons the mucous from the nose was taken. This was collected on swabs of cotton and kept in small glass vials. A moist chamber was improvised by placing a moistened piece of blotting paper at the bottom. Only perfectly healthy infants under five months were inoculated. The first were tested with the cutaneous tuberculin test, but when it was found that ten consecutive cases gave a negative reaction, the test was deemed unnecessary. The inoculations were made by applying the swab

gently to the nasal mucous membrane. Up to the present time forty infants have been inoculated at the following ages: one at 2½ months, four at 3 months, three at 3½ months, six at 4 months, fifteen at 4½ months, and eleven at 5 months. The inoculations were made by preference between the fourth and fifth month because as the immunity was not absolute at that time, it seemed more likely that the organism would react with the formation of antibodies. The majority of the infants showed no distinct reaction; fifteen had a slight rise of temperature, from 100 to 101.5 degrees, varying in the time of its appearance from the eighth to the fourteenth day. Possibly a larger number of slight reactions would have been detected if the infants had been under constant observation. In a few instances a small number of spots were noted on the face or body, varying from the fourteenth to the eighteenth day, but these were so few and indistinct that they would ordinarily have escaped detection. No oral manifestations were present. Of the forty cases inoculated four have since come in intimate contact with cases of measles and have not contracted the disease. In addition, having satisfied myself that those who were inoculated were really immune, two of the cases were re-inoculated at the age of twenty-one and twenty-three months, respectively. In both cases the result was negative.

In view of the fact that the virus of measles has been shown to be filterable, it would seem preferable to use the filtrate. I therefore prepared a filtrate by thoroughly mixing the mucous with a normal saline solution and passing it through a Berkefeld candle. (For the privilege of utilizing the facilities of the laboratory I am indebted to Dr. Eugene P. Bernstein, pathologist to the hospital.) However, from some experimental work which I have done, I believe that the filtrate is usually non-virulent and could not be depended upon for the purposes of immunization. It will be noted that Anderson and Goldberger, using the filtrate from the blood, only succeeded in infecting monkeys in about twenty per cent of those inoculated. It would be desirable to devise some method by which the infectious material would retain its virulence for more than 24 hours.

I believe that the method which I have outlined presents a safe and simple means of immunizing against measles.

### A CASE OF LEAD POISONING.\*

By WILLIAM A. GROAT, D.S., M.D.,  
SYRACUSE, N. Y.

THE case of lead poisoning which I am to report, I believe is of interest because of the peculiar manner in which a re-intoxication is obtained.

Read before the Syracuse Academy of Medicine, at Syracuse, December 15, 1914.

This young man, who relates a negative family and personal history with no previous intoxications by any metallic poison, two years ago last August was employed by a silverware manufacturing company as a die sinker. The method by which the dies were tested is a common one, so I am informed, sheet lead being used as a substitute for the silver for which the dies were ultimately intended. The die sinker in testing his die makes a number of impressions, thereby finding out the defects in his workmanship and rectifying them before the die is turned over as a finished product. In this particular manufactory, the die sinkers were required to roll their own lead sheets from small ingots and it is readily understood how one, at least sensitive to lead, could acquire lead poisoning, which this young man did, having the characteristic symptoms of colic, wrist drop and toe drop. He was under the care of Dr. Clarke of Skaneateles, who made the diagnosis. He was ill a long time, several months, and ultimately recovering a reasonable degree of health, then being free from palsy and from colic, he entered employment with a manufacturing company as a lathe-hand, working on steel and steel alloys. He left their employment because of illness, which we will speak of later, and then was employed as an automobile repair man. He had worked as an expert mechanic in this repair garage for several months when I first saw him. Because of his great skill as a mechanic, which can be readily understood from his former occupation, he was not required to do any soldering, painting, or to come in contact with these things, and in no way could we assume that he was likely to become exposed to lead.

He consulted me, however, because of colic, weakness, chronic constipation, recurrent headache, sallow complexion and weakness of the forearms. Knowing that he had had lead-poisoning, and noting that the symptoms were similar to those he had experienced during that attack, he himself was suspicious of lead, but could not think of any place where he could be getting it, and was referred to me with the possibility that a blood examination would assist in the diagnosis. His blood showed the characteristic granular degeneration of the red corpuscles, the so-called stippled cells; and one found a distinct lead line along the gingival margin.

I went over the matter very carefully with him on three different occasions, and naturally inquired particularly about the illness which had caused him to give up his job with the metal working concern where he worked as a lathe-hand, working, as you will remember, solely on steel alloys not containing lead. It was shown that he had an acute illness, beginning with a sore throat and a cold, as he expressed it, and was not particularly ill, but in a week or ten days had rapidly developing weakness in the muscles of the arm and leg, with wrist drop and

toe drop, as near as he could describe these symptoms. He was sick for about a week when he had colic, and the colic has continued with slight abatement, and the palsy has improved to a mere weakness since that time.

As the case presented itself to me, I assumed positively he had lead poisoning in the first instance and that recently he has had small amounts of lead, at least, which would account for his lead line, his colic, his constipation, his headache and the blood condition. But where does he obtain it? I could not see any source from the garage; he was drinking Skaneateles water; there had been no painting done in his house, nor had he painted anything, nor was there a paint shop in connection with the garage where he worked, to intoxicate him by dust. His palsy and recurrence of colic after his attack of sore throat while working as a lathe hand, made me wonder whether he had not had diphtheria, followed by diphtheria palsy, for again there was no apparent source of lead.

As I have said, after going over this matter with this very intelligent man a number of times and arriving at no fixed opinion aside from that he still had lead poisoning and must be experiencing a re-intoxication, I finally asked him to tell me exactly what he did as a lathe hand. He said the parts on which he worked were piece-work, and the men making them therefore made but one cut with the machine. The parts were then inspected by an inspector, and if found defective in any way were thrown out, and these defective parts came to him, it being his business to rectify them; that is, to quote him exactly, "If they were out of round or a tooth was out, it was up to me to make it right." There were some ten or fifteen common defects. Quite innocently, I said, "How did you know whether they were out of round, or what not?" And a look of great understanding spread over his face and he made a number of wholly irrelevant remarks. (I did not say irreverent, although perhaps they were both irrelevant and irreverent.)

You have guessed the answer. The inspector marked them with a brush and paint, with a series of hieroglyphics. The paint of course, never got very firm, and off the top of the pile it might be quite green. In fact, he recalled that his hands were frequently discolored by paint. While this ordinarily would not cause lead poisoning in many cases, yet in a man already sensitive to lead, it is more than sufficient to act. The relationship of the sore throat and cold to his attack can be explained, I think, quite simply either as a mere coincidence or that the lowered vitality from this simple infection determined the appearance of his acute lead symptoms.

## Medical Society of the State of New York

### HOUSE OF DELEGATES.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York was held in the Assembly Room of the Iroquois Hotel, Buffalo, April 26, 1915, at 8.00 P. M. Dr. Grover W. Wende, Buffalo, President, in the Chair; Dr. Wisner R. Townsend, New York City, Secretary.

On the roll call the following delegates answered to their names:

A. J. Bedell, F. C. Conway, T. W. Jenkins, C. R. Bowen, T. D. Brown, W. M. Dunning, G. S. Lape, J. P. Creveling, V. M. Griswold, N. G. Richmond, A. W. Booth, P. B. Brooks, J. B. Ransom, S. V. Whitbeck, J. C. Otis, J. E. Sadlier, F. W. Barrows, L. Kauffman, A. W. Hurd, F. C. Gram, F. P. Lewis, J. Richter, C. G. Stockton, J. Ullman, C. C. Trembley, W. J. Peddie, J. L. Louthian, C. N. Bibbins, R. F. Barber, E. H. Bartley, A. H. Brundage, W. F. Campbell, G. D. Hamlin, C. G. Crane, J. A. Lee, E. A. Griffin, W. B. Chase, C. Eastmond, J. R. Kevin, W. D. Ludlum, S. J. McNamara, J. C. MacEvitt, J. J. O'Connell, J. O. Polak, J. W. Fleming, J. J. Sheehey, G. E. Deely, J. P. Warbasse, A. L. Shaw, W. E. Bowen, L. W. Howk, O. E. Jones, W. T. Mulligan, W. D. Ward, C. Stover, S. J. Kopetzky, G. Barrie, T. P. Berens, J. B. Bissell, N. E. Brill, W. L. Carr, G. W. Kosmak, F. M. Crandall, E. E. Harris, C. Herrman, W. B. Hoag, H. Lilienthal, J. M. Lynch, J. M. Mabbott, M. Packard, C. J. Strong, W. C. Phillips, A. C. Prentice, C. H. Richardson, A. Jacobi, E. F. Smith, F. E. Sondern, T. S. Southworth, H. S. Stark, F. Van Fleet, R. Waldo, W. L. Culbert, J. Van D. Young, J. C. Plain, C. H. Baldwin, F. H. Peck, A. E. Larkin, J. R. Wiseman, D. H. Murray, E. C. Thompson, C. E. Townsend, J. Dugan, J. K. Stockwell, B. W. Dewar, C. Boettiger, W. J. Malcolm, E. Howd, J. H. Lyons, G. A. Leitner, W. G. Cooper, G. C. Madill, G. S. Towne, F. C. Reed, J. E. Medden, J. A. Conway, D. P. Mathewson, F. Overton, M. B. Heyman, L. Coville, M. Gage-Day, H. E. Clarke, E. A. Nevin, E. I. Harrington, G. A. Peck, W. H. Purdy, E. G. Ramsdell, L. C. Broughton, E. C. Foster. Total, 118.

The following officers and chairmen of committees were present:

Grover W. Wende, President; Myron B. Palmer, First Vice-President; S. W. S. Toms, Second Vice-President; Wisner R. Townsend, Secretary; Alexander Lambert, Treasurer; Thomas H. McKee, Chairman Committee on Scientific Work; Joshua M. Van Cott, Chairman Committee on Public Health; Lewis K. Neff, Chairman Committee on Legislation; Albert T. Lytle, Chairman Committee on Arrangements; Frank Van Fleet, Chairman Committee on Medical Research; also the following councilors: Henry L. Winter, First District Branch; Robert Selden, Third District Branch; George Lenz, Fourth District Branch; Frederick H. Flaherty, Fifth District Branch; Thomas F. Manley, Sixth District Branch; William T. Shanahan, Seventh District Branch; Arthur G. Bennett, Eighth District Branch.

The President: As we have a quorum present, I now declare the annual meeting of the House of Delegates open for the transaction of such business as may properly be presented to it.

The first order is the reading of the minutes of the last meeting by the Secretary.

The Secretary: As the minutes were printed in the May issue of the JOURNAL of last year, I move they be adopted as printed.

Seconded and carried.

The President: The next order is the report of the President. (See May, 1915, JOURNAL, page 175.) As this report has been printed and copies of it have been in your hands for some time, with your indulgence I will simply read the recommendations contained therein.

Dr. Thomas H. McKee: I move that the report be received and adopted.

Motion seconded.

Dr. Floyd M. Crandall: I move to amend that the report be received and the recommendations be considered seriatim.

Motion seconded.

Dr. Henry S. Stark: I move as an amendment to the amendment that the recommendations in the President's report be considered seriatim in the Committee of the Whole, as has been done at other meetings of the House of Delegates.

Seconded.

As several members objected to Dr. Stark's motion, Dr. Stark, with the consent of the seconder, withdrew his amendment.

Dr. Albert T. Lytle: I move as an amendment to the amendment that so much of the President's report as is included under the head of "Finance" be referred to the Committee of the Whole, and that the balance of the report be adopted.

Motion seconded.

Dr. Samuel J. Kopetzky: I rise to oppose the amendment to the amendment for the simple reason that the House of Delegates wants to discuss all the suggestions contained in the President's report. The question of finance is not the only one for consideration before the House tonight. There are a number of recommendations to be considered, the creation of committees, their advisability, etc., and they should be discussed with the President in the Chair, and I hope the amendment to the amendment will not prevail.

Dr. Lytle: My reason for offering an amendment to the amendment is that this question of finance is a mooted one in this report. The majority of the other recommendations are amendments to the Constitution and do not need to be discussed and will naturally lie upon the table until the proper time for action on them. It seems to me time enough will be taken in a discussion of the question of finance and these other questions in the report can be easily adopted.

Dr. T. Passmore Berens: I rise to a point of information. If this amendment to the amendment is carried, I would like to know whether the recommendations are adopted and approved?

The President: No. This is simply an amendment to the amendment you are to vote on.

Dr. Berens: If the recommendations you make in your report are adopted tonight, do they become part of our laws, or do they not?

The President: Some of them cannot. They are changes in the Constitution and By-Laws and would have to lie over until next year.

After further discussion by Drs. E. Eliot Harris and Nathan E. Brill, Dr. Lytle withdrew the amendment to the amendment.

Dr. Crandall: I rise to a point of order.

The President: Please state your point of order.

Dr. Crandall: The President's report has not been received. My amendment was to receive the report.

The President: In reading the recommendations, it could not be otherwise than that the House receives the report. It would be out of order to entertain a motion to receive the report after it is read by the President.

Dr. Brill: The original motion has been amended to receive the President's report. The reading of the report is not necessarily the receipt of it. The reading of the report is its presentation. The receipt of the report is an action on part of the House of Delegates, and not an action on the part of the presiding officer. Therefore, the report ought to be first received. After it is received, a motion in reference to any of its provisions can be made; but as a parliamentary procedure the report must be received in order that the House may act on it.

The President: I am sorry to disagree with the last speaker.

Dr. E. Eliot Harris: According to Roberts' Rules of

Order, by which the conduct of business of this House is governed, the reading of the report is the receiving of it, and a motion to receive the report is out of order. I will ask for the decision of the Chair on that point.

The President: Dr. Harris is correct. A motion to receive the report is out of order.

Dr. J. Richard Kevin: I move as a substitute that the part of the President's report referring to the finances of the Society be referred to the Committee of the Whole.

Seconded and carried.

Dr. Kevin: I now move that this House of Delegates do now resolve itself into a Committee of the Whole.

Seconded and carried.

The President: I will appoint as Chairman of the Committee of the Whole, Dr. Franklin W. Barrows, of Buffalo, and Dr. Wisner R. Townsend as Secretary.

The Committee of the Whole having considered the matters that came before it, namely, that the whole question of our financial policies be submitted to the members as a referendum as provided in Article VIII of the Constitution of the Society—"Shall the Medical Society of the State of New York continue, diminish or discontinue its expenditures for malpractice defense, publication of the JOURNAL, or publication of the Directory?"—on motion of Dr. Kopetzky the Committee arose, and a report from the Chairman of the Committee of the Whole was called for.

At this juncture, President Wende resumed the Chair.

Dr. Barrows reported that the Committee of the Whole had undertaken the work assigned to it and had considered the motion to adopt the President's recommendations under the head of "Finances," and stated that this motion was lost by a vote of 20 to 77.

Dr. Kopetzky: I move that the report of the Committee of the Whole be received and adopted.

Seconded and carried.

Dr. Barrows: I move that we take up the other recommendations in the President's report.

Dr. Wendell C. Phillips: I second the motion.

Carried.

Dr. Charles E. Townsend: I would like to offer the following amendment to Article V of the Constitution to add after the words on the second line, "Chairman of standing committees," the words "retiring president shall be a member of the Council for one year after his term of office expires."

Dr. Phillips: I second the amendment.

Received. To lie over for action until next year.

The President: Under "Scientific Work," I recommend the re-creation of a permanent Section in the Scientific Work of this Society to be known as "Section on Public Health, Hygiene and Sanitation." What will you do with this recommendation?

Dr. Phillips: I move that it is the sense of the House of Delegates that this Section should be inaugurated for the coming year.

Seconded and carried.

The President: The next recommendation relates to petitioning the Department of Health of the State of New York to order a system of confidential notification of all cases of syphilis for statistical purposes, from which the name of the afflicted shall be omitted.

Dr. Harris: I move that this recommendation be adopted.

Seconded and carried.

The President: Recommendation Number 2. To arrange for the diagnosis and treatment by boards of health of all cases of syphilis for which no provision can be otherwise made. What will you do with this recommendation?

Dr. Harris: I move that this recommendation be not concurred in for the reason that it is unwise for this Society to go on record along the line of asking the Health Department to practice medicine and treat cases. I hope the Society will not commit itself along the

lines of asking that the Department of Health practice individual medicine.

Dr. Kopetzky: I move that this recommendation be laid upon the table.

Motion seconded, and on being put to a vote was declared lost.

Dr. Harris: I would suggest that the word "treatment" be stricken out of this recommendation.

Dr. Brill: It would be a wise suggestion on the part of this body to have the various local boards of health assist in making the diagnosis where it can only be made with great difficulty or made only by the Wassermann test. This would have a decided influence on many practitioners of the state. I agree with the position taken in reference to the treatment of disease. It would be to the advantage of a large proportion of medical men of this state to have the local boards assist them in making a diagnosis in suspicious cases.

Dr. Kevin: The Board of Health of New York City does not need any stimulus in extending its power. When it comes to encouraging boards of health to extend their powers it is up to this body to let that subject alone. I heartily believe that we should not concur in that part of the section of the President's report.

Dr. Paul B. Brooks: Speaking as a sanitary supervisor, the State Department of Health of New York is already engaged in doing the work of diagnosing syphilis and is prepared to do the Wassermann test. That is not generally known.

Dr. Walter B. Chase: In the City of Brooklyn, under the direction of the Board of Health, diagnoses are made by nurses. I have known of such diagnoses being made by them and of patients being quarantined without due authority. The time has come when the Medical Society of the State of New York ought to disapprove of delegating this work to nurses.

Dr. Dwight H. Murray: It is true, as Dr. Brooks has said, that the State Board of Health is making diagnoses in cases of syphilis and is prepared to make the Wassermann test. The practitioner finds it is more trouble to get his diagnosis than it is to treat a case of syphilis, so I do not think it is of much account at present.

Dr. Harris: I move as an amendment that the word "treatment" be stricken out, so that it will read "to arrange for the diagnosis by boards of health of all cases of syphilis, for which no provision can be otherwise made."

The amendment was seconded and carried.

The President: Under the head of "Public Lectures," I recommend that such a public educational course be made a feature of the annual meetings of the Medical Society of the State of New York. What will you do with this recommendation?

Dr. Brill: I move its adoption.

Seconded and carried.

The President: Under the head of "Membership," I recommend that a committee of three be appointed to prepare a more exact and clear definition of what shall constitute eligibility to membership for the instruction and guidance of the County Societies, and to outline some feasible plan for more rapidly increasing our membership. What disposition do you wish to make of this recommendation?

Dr. Harris: I move that this recommendation be adopted.

Seconded and carried.

The President: Under "Legislation," I recommend that a committee of five be appointed to consider the suggestions, the recommendations thereon by the Secretary, and such other suggestions as have been made or may be made, and to report therefrom a comprehensive plan for consistent attitude and approach on all medical legislation. What will you do with this recommendation?

Dr. Murray: I move its adoption.

Seconded and carried.

The President: Under "Public Health," I recom-

mend that the duties of the Committee on Public Health be so enlarged that it shall act in the capacity here suggested, and that it shall seek and arrange for co-operation from the other legally recognized state medical societies in consideration of the acts of the Commissioner of Health of the State of New York. What will you do with this recommendation?

Dr. Van Fleet: I move its adoption.

Seconded and carried.

The President: Under "Workmen's Compensation," I recommend that a standing committee, consisting of five members, be created, to be known as the "Committee on Economics," that shall be on the watch for the appearance of any movement affecting the economic life of the membership, that shall at once begin an investigation when such a movement is discovered, and that shall report its findings and make recommendations at least annually to the House of Delegates. What action will you take on this recommendation?

It was moved and seconded that the recommendation be adopted.

Dr. Phillips: I would like to ask for a ruling as to whether this recommendation does not involve a change in the By-Laws?

The President: Yes, it does. It lies over.

The Secretary: While I believe we should have a committee to act on this subject, I am opposed to putting any more members on the Council. I do not dispute the fact that in a multitude there is more wisdom than in a few, but if the recommendations of the President are adopted, we will be adding two more members to the Council, it will become too large, and the additional numbers would not necessarily add to the value of the Council. It would, however, increase the expenses of the Society very materially. It costs now about \$150.00 to hold a meeting of the Council for railroad fares alone and each new member added means increased expense. The same work could be done by a special committee on economics with definite duties, a committee like that on prize essays.

Dr. Stark: Would not this recommendation in the President's report nullify itself by its wording, inasmuch as the President recommends that this committee report back to the House of Delegates? This committee reports once a year; in the meantime, the legislature has met and has adjourned, having done all its work, and consequently no work can be done by the committee until the meeting of the Medical Society of the State of New York.

The President: You have misinterpreted the recommendation. This is simply to have a change next year in the By-Laws and is not open for discussion.

Dr. Ralph Waldo: This is a most important subject and a most important committee, and I hope the recommendation of the President will prevail, and if this be not a special committee, it be made one of the regular standing committees with power to work at any time that is necessary.

Dr. Harris: I would like to speak a word in favor of such a committee. This Committee on Economics is not limited to legislation, but it will have many other things to do, and report back to this body. I hope the recommendation of the President will prevail.

Dr. Van Fleet: If I understand the matter rightly, this Committee on Economics will not usurp the powers of the Committee on Legislation in any way.

The motion to adopt the recommendation was put and carried.

The President: Under "Education," I recommend that the By-Laws be so amended that the Committee on Medical Research shall hereafter be known as the Committee on Medical Education, whose functions shall be described in Chapter VII, which shall read: The Committee on Medical Education shall consist of the Chairman and one member for each two hundred 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 medical and scientific education and experimentation; it shall after investigation suggest changes in methods of medical teaching, including undergraduate and licensing requirements, and it shall use all honorable means to oppose such views as may be presented to the Legislature with a view of limiting or restricting scientific and medical teaching and progress. In legislative work it shall act in co-operation with the Committee on Legislation.

What will you do with this recommendation?

Dr. Phillips: I move the recommendation be approved.

Seconded.

Dr. Albert H. Brundage: As this recommendation seems to involve the undergraduate requirements and the re-examination of physicians in practice, I would like to ask whether the question cannot be divided.

The President: I do not think it is necessary to divide the question.

Dr. Brundage: While I favor a committee to investigate midwives, I am unalterably opposed to any addition to the undergraduate requirements or to adding another year in any way; and I am opposed to the re-examination of medical practitioners. I am opposed to such consideration of these two matters by any such committee. To do so is inimical to the best interests of the profession. I protest.

Dr. William F. Campbell: I consider this a most important recommendation because it affects the educational interests of the state. I consider the number of the committee recommended too large. It would mean a committee of forty. It is impossible to do effective work with a committee of forty. If we have a committee of ten it will be quite sufficient to handle matters.

I would recommend that the committee be ten, and I make a motion to that effect.

Motion seconded.

The President: I have changed it to ten.

Dr. Stark: I rise to a point of order.

The President: State your point of order.

Dr. Stark: The President cannot change in any sense his report. That is my point of order.

The President: You are out of order.

Dr. Stark: I would like to ask for a legal construction of my point of order from the counsel of the Society.

Mr. James Taylor Lewis: There is no reason why the President, at the request of the delegates, cannot change his report to anything on any subject, and then ask that his recommendation be adopted or rejected.

The President then put the motion to approve the recommendation and declared it lost.

After some discussion, Dr. Harris moved that the motion just declared lost be reconsidered out of consideration for the President.

Seconded and carried.

Dr. Harris: I now move that the recommendation of the President be adopted.

Seconded and carried.

The President: The report of the Secretary. (See May, 1915, JOURNAL, page 181.)

The Secretary: I will not read the report, but only the recommendations. They are that the Committee on Legislation should have more representatives throughout the state. That has been referred to a committee by the adoption of the President's report on this subject, and might be omitted.

The other recommendations are to urge upon the Society the desirability of trying to induce the American Medical Association to pay the railroad fares of its delegates to the annual meeting of the House of Delegates of that body, and that the District Branch Councilors arrange for at least one paper on cancer control at their next meetings in the fall.

The President: What action do you wish to take on this?

Dr. Van Fleet: I move that these recommendations be adopted.

Dr. Phillips: I second the motion.

Carried.

The President: The next order is the report of the Treasurer. (See May, 1915, JOURNAL, page 183.)

It was moved that this report be adopted as printed. Seconded and carried.

The President: Annual report of the Council. (See May, 1915, JOURNAL, page 186.)

Dr. Van Fleet: I move the same course be taken with the report of the Council.

Dr. Phillips: I second the motion.

Carried.

The President: Report of Committee on Scientific Work. (See May, 1915, JOURNAL, page 190.)

Dr. McKee: I move that this report take the usual course.

Dr. Phillips: I second the motion.

Carried.

The President: Report of the Committee on Legislation. What will you do with it? (See May, 1915, JOURNAL, page 188.)

Dr. Phillips: I move that it be adopted as printed. Motion seconded.

Dr. Van Fleet: I move to amend that a vote of thanks be extended to the Committee. There is no committee that has done more work than the Committee on Legislation. There is no committee that has had such a trying situation placed before it as this Committee, and it is deserving of the highest praise we can give its members.

Dr. Harris: In seconding this motion, I wish to say the members of this Committee have been compelled single-handed to do the work of the whole profession of the state, and therefore they are entitled to this vote of thanks.

The original motion as amended was put and carried.

The President: Dr. Neff will accept the sincere thanks of the House of Delegates for his arduous labors during the past year.

Dr. Lytle: The Committee of Arrangements would like to add to its printed report (see May, 1915, JOURNAL, page 188) some facts relative to the House of Delegates and meetings of Sections. May I add them?

The President: Proceed.

Dr. Lytle: We have selected the Sixty-fifth Armory for the meetings of the various Sections. The public have been invited to inspect the educational exhibits, but are to be kept out of the Section meeting rooms. The members of the Society will wear a gold button, while the guests will wear a silver button, and also the physicians who are not members.

The annual dinner will be held on Wednesday night at the Hotel Statler.

The Committee of Arrangements, while it has put on a very large exhibit, has been under considerable expense. It is not known at this particular moment just exactly what the expenses will be; also, the exact income is not known at this particular time. It is estimated that we will take in something like \$4,000 and that our expenses will be less than \$5,000.

The President: What will you do with this report?

Dr. Van Fleet: I move it be received.

Seconded and carried.

The President: Report of the Committee on Medical Research. (See May, 1915, JOURNAL, page 194.)

Dr. Van Fleet: I move the report be received as printed.

Dr. Phillips: I second the motion.

Carried.

The President: Report of the Committee on Public Health. (See May, 1915, JOURNAL, page 187.)

Dr. Fleming: I move the report of the Committee be adopted as printed.

Seconded.

Dr. Nathan E. Brill: Mr. President, before you permit this body to take action on the motion to adopt this report, I hope that you will permit me to speak

on the motion. My discussion will be entirely restricted to that portion of the report beginning with the words, "After the European war ceases there is reason to believe that the United States," etc., etc., and ending with the words, "We would reiterate the opinion expressed by us in a former report, that the Quarantine Station should remain a State institution and not become a Federal institution."

I speak to oppose the adoption of that part of the report which I have just read to you, because I am not in favor of this Society acquiescing in any such reactionary resolution, reactionary, I say, because in 1912 this body adopted a motion whose purport was that the best interests of this State would be subserved by the transfer of Quarantine to Federal control. What does the Committee mean when it says in its report, "We would reiterate the opinion expressed by us in a former report, that the Quarantine Station should remain a State institution and not become a Federal institution"? To my knowledge, no report to this body of Delegates recommending State control had ever been offered since the Delegates passed the resolution in 1912 to which I have just alluded. I ask was any such action as expressed in this communication of the Public Health Committee taken by this body of Delegates? The Chairman of this Committee must be in error in his statement.

Gentlemen, the question before us is one of the greatest importance not only to New York City, to New York State, including all its counties, but it is eminently a national question and affects the safety of the whole United States. It is now over twenty-five years since an attempt was made by the medical profession to have Quarantine transferred to Federal control, which attempt was instituted on account of the necessity of having such an important institution free from the changes of officers induced by every change in the political complexion of the Governor of the State. I am making no criticism of the administration of the present Health Officer of the Port of New York, nor of him. On the contrary, I desire to say that in my professional career I am acquainted with four administrations of the office of Health Officer of the Port of New York, and that not one of these ever attained the standard of efficiency of the present incumbent; none had the high ideals of the development of efficiency; none knew what a secure quarantine really meant, better than Dr. O'Connell. (Applause.) In the short time of his service he has instituted measures of reform, measures of progress and efficiency most desirable, and yet I think that the safety of the health of the citizens of the State and the United States would be best secured by a change in the control of Quarantine. You may not know that all the ports of the United States excepting those of New York and Baltimore are now under Federal control. A uniformity in the methods of all quarantine ports is most desirable and tends to greatest efficiency; therefore it is essential that the central government should control all the ports of the United States. Quarantine to be most efficient becomes not only a national but an international question; on this account our government should be able to enter upon contractual relations as to international quarantine with other governments, which under the present conditions it cannot do because it does not control all the ports of the United States.

At present one of the momentous subjects of general interest in our State affairs is the question of taxation. We are all complaining of the burden placed on one of the large cities of this State by being called upon to pay the greatest proportion of the taxes for the necessities of the State. If this were applied to the subject of State taxes, we see a way for the State to obtain a large sum of money for the quarantine plant and at the same time to save about \$300,000.00 yearly in the cost of conducting the administration of Quarantine. If the State turned over its Quarantine to the Federal Government, it would be

receiving an income instead of being compelled to pay for a benefit which redounds to the country at large more than it does to New York.

The government of the United States is thoroughly equipped in its organization, particularly in the Public Health and Marine Hospital service, to take charge of Quarantine. The personnel of that service is dealing with quarantine service in all the other ports; it is particularly adapted by its study and investigations of communicable diseases to give us a most efficient quarantine protection. It has the distinct advantage of having men engaged in the very ports in other countries from which we are getting the contagious diseases, and when one reflects that with the opening of the Panama Canal there will necessarily be an increase in the probabilities of the introduction of the contagious diseases of the tropics and of South America by reason of the increased immigration which in all probability will enter the United States by that route, it seems to me that no other method of quarantine should be supported than one under Federal control. The most of this immigration, as well as the most of this commerce, will come to the port of New York, into which will be introduced an element of danger which under the present system may be extended to all of the cities of this country, and this entirely independent of the possible introduction of the scourges of Asia which may come to us through that channel. It is on these grounds that I say that we cannot accept that portion of the report of the Committee and would move that it be expunged from their report.

Seconded.

Dr. Van Cott: In its annual report in 1913, the Committee on Public Health made the following recommendation, which was duly adopted by the Medical Society of the State of New York:

"Finally, we feel that the State Legislature should be appealed to by the Medical Society of the State of New York to appropriate a sufficient sum of money to make the quarantine station adequate to the needs of the largest port of entrée in the world. Dr. O'Connell, the Health Officer of the Port, has done all and more than could be expected of him with the limited means at his disposal. He has manifested the type of executive ability and public spirit which should command the respect and trust of the people of the Empire State. While Hoffman and Swinburne Islands are in as good condition as is possible under existing circumstances and a thoroughly modern pathological and bacteriological laboratory is practically completed at Rosebank, the Quarantine Station is sadly lacking as an up-to-date plant.

The State Society should endorse a request for two millions of dollars for the purpose of remodeling the plant. Hoffman and Swinburne Islands should be shored up, a modern unit system of pavilions should be built on Swinburne Island and the old buildings on Hoffman Island should be either reconstructed or replaced by modern structures. There should be a central light, heat, power and water plant, which would make a great saving of running expenses. And the channel to the two islands should be deepened. We could then point with pride to a Quarantine Station which would be on a par with those of the other great powers."

It cost New York State during the last fiscal year \$250,000 to maintain the Quarantine Station. The steamship companies paid back in fees to the State \$201,000, the State thus only paying actually \$49,000. There would have been no cost to the State but for the war.

At a recent meeting of the Chamber of Commerce the retention of Quarantine under control of the State was advocated for the reason that, as 76 per cent of all communicable diseases coming into this country come through the port of New York, it was advisable to have a Port Officer on the spot with full authority to act on his own initiative. This fact, and the further fact that the steamship companies, recog-



nizing the high efficiency of the present arrangement, are more than willing to pay the fees incident to it, lead the Committee on Public Health to believe that the Empire State should control its own Quarantine Station, at least for the present.

We possess one of the finest laboratories in the country, which is under the control of a gentleman who has had a wide experience and fine education in quarantine work.

I am sure nothing could be better administered than the Port Office under Dr. O'Connell, and the laboratory should stay under the control of the State.

Dr. Kevin: It has been intimated that the port of New York is open and exposed to Asiatic scourges and various diseases, and then Dr. Brill immediately recommends that it be taken away from the State of New York and handed over to the Federal Government that they may perform their duty properly. Mr. Chairman, to my mind, there is nothing before this body to-night other than the endorsement of an efficient officer. Dr. O'Connell and his predecessor, have kept New York State free from the diseases of foreign ports. They have kept it clear because they have had the interests of the Empire State at heart. Why is it that these recommendations have been made to change it? It will tell you. There is politics in it, Mr. Chairman, politics. The Federal Government want this plant that they may dump everything from Maine to the Gulf; there is no other place by which they can manipulate their system. That is the reason, and that is the only reason, and I regret that at this time particularly, when we need efficiency. When the war, which is now going on, is over, it is going to bring a number of diseases to this port. I repeat, I regret that at this particular time, we should bring in this report of non-concurrence in the Committee's recommendation. The Committee has gone into the matter thoroughly; it understands what is presented to us, and I hope that this body will concur in the Committee's recommendation, because we have the utmost confidence in the Committee.

Dr. Joseph J. O'Connell: I desire to express my thanks to Dr. Brill for his generous compliments in reference to the Health Officer of the port of New York. This statement coming from a man with the reputation of Dr. Brill, is a high honor and I appreciate the same. I would like to make a few corrections in his statement relative to the regulations of the port of New York and those of other ports that he states are now under Federal control. Perhaps when they are explained to him he may change his views on the subject of Federal control.

The Quarantine of the port of New York is governed by the Federal laws and regulations, the same as every port under Federal control. It is further governed in addition by the Public Health Law of the State of New York, which does not conflict in any way with the Federal regulations, but adds thereto. He stated that Philadelphia was under Federal control, when in fact it is governed and supported by the State of Pennsylvania. The Federal Government is represented by two of its officers who board ships at the same time with the State officers. The nearest Federal station to Philadelphia is Reedy Island, which is fifty miles from the Quarantine Station at that port.

My support of state control is not from a selfish standpoint. My term of office will expire on February 21, 1916, but I have confidence that a successor can be selected from this body to keep up the high standard which all public health officials maintain exists at present. I do not claim the credit alone for the present efficiency of this department, because the Health Officer of this port is guided by a very efficient Advisory Board and its recommendations are carried out. The expense for maintaining the Health Officer's Department in the year ending September 30, 1914, was \$250,000. Of this sum

\$201,000. was collected in fees, leaving to be paid by the taxpayers of the State \$49,000, and this would have been entirely eliminated but for the reduction of fees due to the present war. Under normal conditions this department would be self-sustaining.

You probably recall that last year at the port of Providence, Rhode Island, typhus fever made its appearance. This has been officially reported in the Public Health Report, Volume 29, No. 2, page 82, but the report fails to state what became of the contacts. These, by direction of Dr. Rupert Blue, Surgeon General, were remanded to New York for care and treatment. Should a great many epidemic diseases appear at the various ports of the United States following the present war, would the port of New York be made a dumping ground for such cases, as it was in 1914 when Providence did not have the proper accommodations for the care of such persons.

I desire to express my thanks to this body for its kind attention. I do not desire to cast reflection on the Public Health Service, but, at the same time, I maintain that there is no advantage in transferring the State Department to the Federal Government.

Dr. A. Jacobi: In rising to speak on this subject I wish to mention the promise I made to Dr. O'Connell to-day. I promised him to-day that I would oppose him. He gave me a hearing to-day. I was very attentive, and he showed his confidence as he has just now. I told him I had all the possible respect for him; that I knew that Quarantine was in good hands and all that, but still I told him I should oppose him. We have every confidence in him and in his administration, but this is not a local or State question. It is a national question. To my mind Quarantine ought to be settled at once. Unfortunately we seem not to be one nation now; we are fifty nations. We should feel we are citizens of the United States, and not merely citizens of the State of New York or any other state. I am of the opinion that the Federal Government should take care of its obligations. If a resolution is introduced to the effect that Quarantine shall remain a State institution indefinitely, I would oppose it. If you change the wording in the report and make it read that it shall for the present remain a State and Federal institution combined, I might approve it, but unwillingly. I will not go into the reasons why it should be a national institution. There is not a member here in this room who has not given this question a great deal of consideration, and I shall not go into the question of what becomes of the hundreds of thousands of people that come to our shores, seeking refuge annually. Very few of them remain in New York City. They go into the country in vast numbers and if they have any disease it may be either discovered at once or in many cases only subsequently. This is not a question of personality, and I am positive that Dr. O'Connell does not look upon my opposition or the opposition of anyone as a personal affair. We are citizens of the United States, and I believe the Federal Government ought to take hold of the New York Quarantine as it must do in Baltimore and Philadelphia.

So far as Philadelphia is concerned, I heard a report only yesterday of a gentleman who came from Europe a year ago and complained that on account of the complexity of quarantine it took twenty-four hours to go from inlet to Philadelphia. All of these things Dr. O'Connell would have changed, I am sure, but so far as I know, there are plenty of men who would have done the same thing, I hope. Still I should be glad if Dr. O'Connell remains where he is, but he will not insist upon his being retained in that place simply because he is Dr. O'Connell, and his personal friends favor him. I repeat, that I am in favor of having the United States take care of its own obligations.

Dr. Wendell C. Phillips: I do not think there is the slightest question of a doubt that a referendum could safely be taken upon this subject by the medical profession of the State of New York, and a vast majority of the medical profession of the State would say, let us turn over the quarantine to the National Government. I speak on this question because of the attitude the Medical Society of the County of New York took on it, and I wish to remind many of you that the New York Academy of Medicine has voted on this question and recommended that the quarantine of this State be turned over to the National Government, and the delegation from the Medical Society of the County of New York is instructed to favor such a resolution.

I regret the question of politics has come up. It is too broad a question for that, but inasmuch as it has, it is probably, no news to most of you that the chief political side of the matter is to retain the office in New York State for the patronage which it offers.

Dr. Brundage: Although, primarily, I was fundamentally opposed to other than Federal-control, because I believe port-control inherently belongs there, I must confess that in listening to Dr. O'Connell I have been converted to a present maintenance of the State-control. It is evident that State-control as now exercised secures the best protection for our city and State and gives the most efficient and certain protection for the country at large. I feel that while this is true we should not change the control; that it would be neither wise nor safe to do so. I hope our medical brethren from Manhattan Borough will feel that they are in a position to favor postponement of the change to Federal control, notwithstanding any previous partial commission from their Society.

Dr. Brundage moved as an amendment to the motion of Dr. Brill that the Quarantine for the present remain a State Institution.

Dr. Jacobi said he was willing to second the motion and accept amendment. Dr. Van Cott also accepted. On being put to vote.

Motion declared carried.

Dr. Brill: I call for a division of the vote.

The President: The division of the vote is upon the acceptance of the report of the Committee on Public Health with the amendment of Dr. Brundage.

There were forty-five in favor of the motion and fifty-one opposed to it.

The President declared the amendment lost.

Dr. Brill: I would like to introduce the following resolution in reference to this matter.

*Resolved*, That the economical and efficient administration of the Quarantine service, and above all the safeguarding of public health, demand the transfer of the Quarantine Station of the port of New York from the State to the National Government.

Dr. Berens: I second the resolution.

Dr. Brill That resolution is a substitute for that part of the report.

A Delegate: This resolution is out of order and should come up under new business.

Dr. Brill: Inasmuch as the report is before us for action, any amendment can be made to it. Why an amendment to this report should be declared or considered out of order, I cannot conceive.

The President: Please put your resolution in writing.

Dr. Brill stated that he would introduce it under new business and withdraw it at the present time.

Dr. Van Fleet moved that the motion of Dr. Brill excluding from the report the matter relating to Quarantine be adopted.

Seconded and carried.

Dr. Van Fleet moved that the rest of the report be adopted.

The President: The motion before the House now is the acceptance of the entire report with the portion stricken out as originally moved by Dr. Brill.

Seconded and carried.

The President: Report of the Committee on the Regulation of the Introduction of Medical Expert Testimony. (See May, 1915, Journal, page 186.)

Dr. Dwight H. Murray: As hinted in the report as printed, I desire to present the following supplementary report:

*To the House of Delegates:*

It is with extreme pleasure that your Committee on Medical Expert Testimony is able to report that the bill introduced in the Legislature this year (a copy of which is hereto annexed\*) has passed both Houses of the Legislature, has been signed by Governor Whitman, and is now a law.

Your committee has been under continuous duty on this matter for the past eight years and has had much at times to discourage it, but has felt that if it could finally succeed it would be worth all the trouble and labor expended.

The bill does not cover all that we wanted to have enacted, but after several trials with a bill including civil cases and failing to secure its passage, we made up our minds that it was better to ask for a bill for criminal cases only, and at a later time to ask for amendments to the law as it was found necessary or expedient. The hardest work in legislative matters is to get the initial legislation and we now have the entering wedge.

Your committee has suggested some changes in the Constitution which it is hoped will be taken up in the Constitutional Convention, and we expect them to be fathered by the Honorable A. T. Clearwater (Delegate) who was Chairman of the Medical Expert Testimony Committee of the New York State Bar Association, and who has worked hard to obtain this curative legislation, until the past two years, since which time the work has been done by your own committee. Inasmuch as the work of your committee seems to be at least temporarily completed, we would ask that we be released from further duty on this question.

Respectfully submitted,

DWIGHT H. MURRAY, Chairman.

The President: What will you do with this report?

Dr. Phillips: I move that it be adopted, and the Committee extended a vote of thanks.

Seconded and carried.

Dr. Van Cott: As the annual report of The Public Health Education Committee was received too late to be printed, I will now present it as a report of progress signed by the Committee:

"This is the first annual report of the Public Health Education Committee as a part of the Medical Society of the State of New York; for although the Committee has been organized in the State for five years under the American Medical Association, it was not an integral part of the State Society until last spring. We appointed five members in different sections of the State, hoping that the county societies could thus be canvassed and many committees formed. As a result of the year's endeavor, it is found that the work is permanently established in seven counties, where thirty-five lectures have been given with an attendance of over 8,395.

The special problems in New York State are the co-operation with institutions already existent, and the establishment of new work. We find co-operation with organizations, such as public schools, churches, mothers' clubs, and welfare associations. One county has public health items published in

\* See May, 1915, JOURNAL, p. 202.

the newspapers, a much valued method and one which many counties could copy. The well developed educational plans of the boards of health also furnish other means of co-operation. The mind baby contests conducted throughout the State by either the boards of health or welfare associations stimulate further efforts on the part of individual members of our committee.

It is hoped to widen the influence of the committee next year by organizing the work in other county societies, for education is the foreword in the prevention of disease. Let each delegate carry this message to his society.

"Respectfully submitted,

PHOEBE M. VAN VOAST, Chairman."

The President: What will you do with this report?

Dr. Brundage moved that the report be adopted. Seconded and carried.

The President: Report of the Committee on Prize Essays. (See May, 1915, Journal, page 188.)

Dr. Kopetzky: I move that it be adopted as printed.

Seconded and carried.

The President: Report of the Committee on Mid-wives. (See May 1915, Journal, page 189.)

Dr. Phillips: I move the report be accepted as printed and the Committee continued for another year.

Seconded and carried.

The President: Report of the Committee on Medical Education. (See May 1915, Journal, page 190.)

Dr. William F. Campbell: I will not read the report but simply wish to say that the Committee has started with the proposition that the preliminary requirements for medical education in the State of New York are too low. They should be raised.

I would like to ask that Professor Kerr, of Ithaca, be permitted to speak on this subject.

Professor Abram T. Kerr: It seems to me that some of the recommendations of the Committee of which I am a member should be adopted. In the first place, the first recommendation in regard to the pre-medical education. I think there should be no question about raising the standard in this state. The standards in the surrounding states are higher than ours. The result is that those who are poorly or imperfectly educated and cannot practice in the surrounding states come to New York. I was one of the minority urging that the two years standard should be adopted rather than a single year of college work. Secondly, as to the question of examinations, it seems to me that the examinations should be more than just written tests. It is an important matter not only to the education of the state, but for many other states. The question of diagnosis is very important. The present examinations are not in many cases a test of the real fitness of a man to practice medicine. If all the sects and regular medicine and everything else were put on the same standard it would eliminate many future as well as present troubles.

As to the question of a fifth hospital year, I am not in agreement with the Committee. That is a question which should be left open for some time to come. The state has no right in any particular to consider the question of adding to the present requirements in that particular. In the first place, the hospitals of the state are not graded, and are not in condition to be utilized in that way either by the state or by the medical students. A great majority of the students are getting an extra year at the present time, and the question of the fifth year, or hospital year, should be referred to a new committee which it is proposed to establish for investigation and future report. The rest of the report, it seems to me, should be adopted.

Dr. Campbell: I move the report be adopted as printed.

Seconded.

Dr. Van Fleet: This section, instead of adding a fifth year to the medical course, provides that the Regents shall require one year as an interne in a hospital registered by the Regents. It would be impossible for the Regents to put that into force for the reason that there are not sufficient hospitals to take in all of these men, and if there were, there might be a good many men who, for one reason or another, perhaps from favoritism, could not receive an appointment, and it seems to me we ought not to go on record as insisting on that until we can have the facilities to comply with it and the means of securing internships for every young man who graduates in medicine. This may come up and the Committee on Legislation may have difficulty in securing its passage. It does not seem to be fair or just.

After further discussion, Dr. Van Fleet moved as an amendment that the report be received with the exception of the paragraph relating to the hospital or interne year.

The amendment was seconded, accepted, and the original motion as amended was put and carried.

The President: Report of the Committee on Workmen's Compensation. (See May, 1915, JOURNAL, page 191.)

Dr. Alexander Lambert: As Chairman of this Committee, I desire to draw attention to a few important points in the report without reading it. The Committee feels it would be wise to continue the work for one year. That would be the recommendation of the Committee.

Dr. Van Fleet: As a member of the Committee on Workmen's Compensation, I will say that we agreed on the matter of a fee bill, and I would like to know as one of the Committee what the sentiment of the House is in that respect.

After discussion by Dr. Harris, Dr. Alexander Lambert moved that it is the sense of the House of Delegates that a fee bill is undesirable.

Dr. Phillips: I second the motion.

After further discussion by Drs. Waldo and Murray, Dr. Ralph Waldo moved to amend that the House instruct its Committee that it shall not adopt a fee bill.

Motion seconded.

The President: That does not materially change the original motion.

The amendment was accepted, seconded, and the original motion as amended was adopted.

Dr. Stark: I move that the Committee be discharged with thanks.

Seconded and carried.

The President: Report of the Counsel. (See May, 1915, JOURNAL, page 195.)

Dr. Phillips: I move that the report be accepted as printed.

Seconded and carried.

The President: The next order is reports of District Councilors. (See May, 1915, JOURNAL, page 199.)

Dr. Phillips: I move they be adopted as printed.

Seconded and carried.

Dr. Julius B. Ransom: I wish to say that inasmuch as the Constitutional Convention did not really go into executive session until today or last evening, it was impossible for this Committee to even report material progress; consequently no printed report appears. The Committee asks for its continuance for one year.

Seconded and carried.

Dr. Julius Ullman: I move that this House of Delegates do now adjourn to meet at 9.00 A. M. Tuesday, and that the first order of business shall be the election of officers.

Motion seconded and carried.

The House thereupon adjourned until 9.00 A. M. Tuesday.

ADJOURNED MEETING OF THE HOUSE OF  
DELEGATES.

The adjourned meeting of the House of Delegates was called to order at 9.10 A. M. Tuesday, April 27, 1915.

Dr. Grover W. Wende, President, in the Chair; Dr. Wisner R. Townsend, Secretary

The election of officers being in order, the President asked for nominations for office of President and appointed as tellers Drs. Mulligan and Packard.

Drs. Albert Warren Ferris, of Saratoga Springs, and W. Stanton Gleason, of Newburgh, were nominated.

The tellers announced the vote. Dr. Gleason 49, and Dr. Ferris 38. The Chair then declared Dr. Gleason elected President for the ensuing year.

All other officers were elected by suspending the By-Laws and authorizing the Secretary to cast one vote for same. Each officer, after vote was cast, was declared elected by the President.

First Vice-President, Dr. Montgomery E. Leary, Rochester; Second Vice-President, Dr. Henry Lyle Winter, Cornwall; Third Vice-President, Dr. Thomas H. McKee, Buffalo; Secretary, Dr. Wisner R. Townsend, New York City; Treasurer, Dr. Alexander Lambert, New York City; Chairman of the Committee on Scientific Work, Dr. Thomas J. Harris, New York City; Chairman of Committee on Public Health, Dr. Joshua M. Van Cott, Brooklyn; Chairman of the Committee on Legislation, Dr. James F. Rooney, Albany; Chairman of the Committee on Medical Research, Dr. Frank Van Fleet, New York City; Committee on Prize Essays, Dr. Albert Vander Veer, Albany; Dr. Edward D. Fisher, New York, and Dr. John F. W. Whitbeck, Rochester.

The President declared that nominations were in order for six Delegates to the American Medical Association. The following were placed in nomination: Drs. Grover W. Wende, Buffalo; William Francis Campbell, Brooklyn; Edgar A. Vander Veer, Albany; Henry L. Elsner, Syracuse; John O. Polak, Brooklyn, and Floyd M. Crandall, New York City.

On motion, duly seconded and carried, the nominations were closed.

On motion, duly seconded and carried, the By-Laws were suspended and the Secretary was authorized to cast one ballot for those nominated.

The Secretary cast the ballot and the President declared Drs. Wende, Campbell, Vander Veer, Elsner, Polak and Crandall elected Delegates to the American Medical Association for the ensuing two years.

Nominations for Alternate Delegates were Drs. John W. Draper, New York City; Willis E. Bowen, Rochester; J. Richard Kevin, Brooklyn; Elias H. Bartley, Brooklyn; George A. Peck, New Rochelle; Walter P. Ludlum, Brooklyn; Hermon C. Gordinier, Troy; Walter W. Strang, New York City.

Drs. W. T. Mulligan and Maurice Packard were appointed tellers and the result of the vote was announced as follows: J. W. Draper, 60; W. E. Bowen, 58; J. R. Kevin, 57; E. H. Bartley, 55; G. A. Peck, 52; W. P. Ludlum, 51; H. C. Gordinier, 49, and W. W. Strang, 25.

The Chair declared Drs. Draper, Bowen, Kevin, Bartley, Peck and Ludlum elected.

Saratoga Springs was selected as the place of next annual meeting and Dr. Albert Warren Ferris, of Saratoga Springs, was elected Chairman of the Committee on Arrangements.

On motion of Dr. Van Fleet, the time of meeting was referred to the Council, to be announced later.\*

The President: The next order of business is the election to retired membership in the Medical Society of the State of New York of Drs. Edwin R. Barnes, Buffalo; Charles W. Bourne, Hamburg; Joseph W. Grosvenor, Buffalo; Hiram P. Trull, Williamsville; Henry D. Wells, Middleburg, and Valentine Browne, Yonkers.

What is your pleasure in regard to the election of these gentlemen to retired membership?

It was moved that the Secretary cast one ballot of the Society for the election of these gentlemen.

Motion seconded and carried.

The Secretary cast the ballot as instructed and they were declared duly elected.

The President: The next order is amendments to the Constitution and By-Laws, submitted at the annual meeting held in New York, April 27, 1914. These now come before the House for action.

The Secretary will read them.

The Secretary: Amend the Constitution, Article III, Section 1, by adding after the word "Secretary" the words "an Assistant Secretary," and after the word "Treasurer" the words "an Assistant Treasurer," and in the same section strike out the word "and" between the words "Secretary" and "Treasurer," and add the words "Assistant Secretary" and "Assistant Treasurer." The article will then read: "The officers of the Society shall be a President, three Vice-Presidents, a Secretary, an Assistant Secretary, a Treasurer, an Assistant Treasurer, and one Councilor from each District Branch. They shall be elected annually by ballot for the term of one year, except the Councilors, and the majority of the votes cast shall elect."

"The President, Vice-Presidents, Secretary, Assistant Secretary, Treasurer and Assistant Treasurer shall be elected by the House of Delegates," etc.

Amend Article V by adding the words after the word "Society," "except the Assistant Secretary and the Assistant Treasurer." The article will then read: "The Council shall be the executive body of the Society. It shall consist of the officers of the Society, except the Assistant Secretary and the Assistant Treasurer, and of the chairmen of standing committees."

Amend the By-Laws by adding to Chapter VI a Section 3A to read as follows: "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."

Amend the By-Laws by adding to Chapter VI a Section 4A to read as follows: "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."

The President: What disposition do you wish to make of these amendments?

It was moved and seconded that these amendments as presented by the Secretary be adopted.

Seconded and carried.

The Secretary: I would like to offer an amendment, proposed by Dr. Kopetzky, to the By-Laws, Chapter III, House of Delegates, Section 1, by striking out the words "in the evening" and substituting the word "on." The section will then read:

"The House of Delegates shall meet annually on the day before the annual meeting of the Society. It may adjourn from time to time as may be necessary to complete its business, providing that its meetings shall conflict as little as possible with the annual meeting of the Society."

Accepted, to lie over until next year.

The Secretary: The House of Delegates of New Hampshire has written the Society that they have unanimously agreed to support the movement to have the expenses of the delegates to the American Medical Association paid by the national body, and they have designated Dr. Chesley and Dr. Frost as delegates to this meeting.

The Secretary: The next matter is a petition from Dr. William B. Reid of the County of Oneida against the Medical Society of the County of Oneida.

\* Date selected by Council, May 16, 1916.

NOTICE OF APPEAL.

WILLIAM B. REID,  
Appellant,

against

THE MEDICAL SOCIETY OF THE COUNTY  
OF ONEIDA,  
Respondent.

The undersigned, William B. Reid, appeals to the Medical Society of the State of New York from the action of the Medical Society of the County of Oneida, July 14, 1914, expelling said William B. Reid from membership and finding him guilty of a charge made about June 25 and June 30, 1909, by Dr. F. H. Peck and Dr. J. G. Kilbourne, and its action in adopting the alleged report of censors and depriving said William B. Reid of the rights and privileges of membership in said Oneida County Medical Society and in the Medical Society of the State of New York.

Said William B. Reid intends to bring up for review the said charges and each and every action taken in relation thereto and thereon and hereby alleges that the said charges do not state a violation of medical ethics; the censors had no evidence to support a finding of guilt; the evidence given by said William B. Reid disproved said charges; the censors did not report any evidence or that there was any evidence or proofs to said County Medical Society; that the report of the censors and the action of said County Society was without any proofs or evidence to sustain them; that the report of said county censors was not made at the next meeting of the County Society and said actions and proceedings were contrary to and not in compliance with the Constitution and By-Laws.

WILLIAM B. REID,  
Appellant.

Dated, March 19, 1915.

To  
The Medical Society of the County of Oneida.  
The Medical Society of the State of New York.

This is a new appeal on the same subject. I move that it be sent to the censors.

Seconded and carried.

Dr. Van Cott: I move the reappointment of a sub-committee on Public Health Education of the Public Health Committee.

Seconded and carried.

Dr. Van Cott: I would like to offer an amendment to Chapter VII, Section 5, of the By-Laws, that "The Committee on Public Health shall consist of nine members," etc., instead of three.

Received. To lie over until next annual meeting.

Seconded and carried.

The Secretary: I have a telegram from Chicago, asking the Society to take action upon the proposed amendment to the By-Laws of the American Medical Association in reference to the Judicial Council. It reads as follows:

"In all cases which arise between a constituent association and one of its component societies; between component societies of the same constituent association; between a member of the constituent association and a component society to which said member belongs; or between members of different component societies of the same constituent association, the Judicial Council of the American Medical Association shall have appellate jurisdiction."

This was introduced with other amendments and referred to the Reference Committee on Constitution and By-Laws of the American Medical Association at Atlantic City, all were acted on but this one which was referred to the constituent societies for consideration before final action is taken in the House of Delegates of the American Medical Association, at San Francisco.

After discussion by Drs. Van Fleet, Lambert, Crandall Richardson and Kevin, Dr. Richardson moved that it be the sense of this body that this

resolution be not favored by the delegates to the American Medical Association of the Medical Society of New York at the San Francisco meeting.

Seconded by Dr. Harris and carried.

The Secretary: I desire to give notice that Dr. Harris has introduced a resolution to change the time and place of the next annual meeting, which is in conformity with Article VI, Section 1, of the Constitution.

Last night it was voted to have a Section on Public Health and to omit for next year the Section on Syphilis.

I move that the Sections on Medicine, Surgery, Eye, Ear, Nose and Throat, Obstetrics and Gynecology and Pediatrics be continued for the ensuing year.

Seconded and carried.

Dr. Stark moved that a Committee on Workmen's Compensation be appointed. Motion not seconded, not voted on.

At this juncture, President Wende introduced his successor, Dr. Gleason.

Dr. Gleason, in accepting the Presidency, said:

Gentlemen of the House of Delegates: I want to express my deep appreciation of the honor you have conferred upon a representative from the country districts, and I wish to say that it is my earnest desire, with your hearty co-operation, and without that I can do nothing, to sustain the high ideals and the traditions of this Society.

Gentlemen, I thank you.

The President: Is there any new business?

Dr. Campbell: I move we instruct our delegates to the American Medical Association to invite the American Medical Association to hold its next annual meeting in New York City.

Motion seconded.

After discussion by Drs. Crandall, Richardson and Harris, Dr. Kopetzky moved that the motion of Dr. Campbell be laid on the table.

Seconded and carried.

As there was no further business to come before the meeting, on motion, duly seconded and carried, the House of Delegates at 10.30 adjourned *sine die*.

WISNER R. TOWNSEND, Secretary.

## Medical Society of the State of New York

ONE HUNDRED AND NINTH ANNUAL MEETING.

The President, Dr. Grover W. Wende, Buffalo, called the one hundred and ninth annual meeting of the Medical Society of the State of New York to order in the Sixty-fifth Armory, 11.20 A. M., April 27, 1915.

Prayer was offered by Rabbi Louis J. Kopald.

At the conclusion of the invocation, President Wende said: I will now call upon Dr. Albert T. Lytle, Chairman of the Committee on Arrangements, for an Address of Welcome. At some other time there must be given to Dr. Lytle an expression of our gratitude for formulating plans, and for his devotion, ability, and tact in bringing about this great meeting.

DR. LYTLE said:

Mr. President, Members of the Medical Society of the State of New York: I hope you will appreciate my embarrassment after hearing these kind words of our President, but I would like to tell you the truth, and it is this: during all the periods of discouragement and anxiety

and the loyal support of the President, and his valuable advice and encouragement and his valuable advice. Therefore, I think that the success of this meeting will be largely due to his efforts.

The Committee on Arrangements, representing the House of Delegates, welcomes the members of the Medical Society of the State of New York to this the one hundred and ninth annual meeting to be held here. I hope that all of you may take the opportunity to see the beautiful arrangement of exhibits in this building, which we were so fortunate as to obtain for this meeting.

In the preparation for this meeting the committee on Arrangements had in mind the Medical Society of the State of New York gathered together once a year for two purposes, one educative, the other social. Under the heading of "Educative" we have the work of the Scientific Committee with the program. The other things that have been added to help this educative idea are the scientific exhibits in the Exhibition Hall which we have been able to obtain. We hope you will be able to visit each one of these scientific exhibits and secure whatever you desire therefrom and encourage the exhibitors.

The next educative feature is that of the commercial exhibit. The commercial houses have been told that this was an educative meeting, and we hope their exhibits will offer to you matters you may wish to know about.

In addition, we have moving pictures for physicians only on Wednesday afternoon and Thursday at noon; for the public generally after the afternoon public lectures and before and after the evening lectures.

The Committee on Arrangements feels that the Medical Society of the State of New York has a wider field of work than that of merely educating its members, and that is to educate the public in these matters of medicine which it is proper for them to understand and which are moot questions with them today. In order to meet this series, public lectures have been arranged by Dr. Franklin W. Barrows, which we believe are something unique and to which all of you are invited tonight. These will not interfere with the meetings of the sections.

In regard to the social side of this meeting, we have in this building everything, except one thing, under one roof; no matter what the weather may be, no matter what the conditions may be, you can come here in the morning and stay all day and all evening until the lights are turned out. This gives you an opportunity to meet one another under the most pleasant conditions.

Furthermore, we have in the southeast corner of the building an excellent restaurant which we hope will be well-patronized by you.

The President wishes me to emphasize the fact that in the restaurant in the Sixty-fifth Infantry Armory, in the southeast corner, meals can be obtained both at noon and at six o'clock.

This afternoon, at five o'clock, in room number seven, there will be a tea given to the entire Society and ladies by the Ladies' Committee.

Wednesday night at the Hotel Statler the annual banquet of the Medical Society of the State of New York will be given. I sincerely hope that each of you who desires to go to this banquet will have by this time made reservation, so that you may not be disappointed tomorrow in not being able to obtain a place.

The sections will be shifted from one place to another as the needs of the lanterns are demanded. Please consult your program and note the instructions on the official bulletin as you enter the building.

One more thing. The official photographer wants to take a photograph of the members.

Again, the Committee on Arrangements representing the House of Delegates, welcome all to this the one hundred and ninth meeting of the Society.

THE PRESIDENT: The next order is the reading of the minutes of the last meeting by the Secretary, Dr. Wisner R. Townsend.

THE SECRETARY: As these minutes have been printed, I move, Mr. President, that they be accepted as printed.

Seconded and carried.

THE PRESIDENT: I wish to take this opportunity to acknowledge to the President of the Chamber of Commerce our indebtedness for his courtesy in inviting this Society to meet in Buffalo. Its able representatives have contributed no little energy toward making this meeting a success.

I now take great pleasure in presenting the President of the Buffalo Chamber of Commerce, Mr. Herbert A. Meldrum, who will now address the Society.

#### ADDRESS OF WELCOME BY MR. MELDRUM.

Mr. President and Members of the Medical Society of the State of New York:

For years medical men have been co-operating and unconsciously establishing the standard which business men later would attempt to acquire. They have worked together in the cause of humanity, consulting and advising, in order that the individual suffering from some affliction might be restored to health. Formulas, methods and practices were given to the world without recompense except the knowledge that humanity was benefited.

I have the greatest admiration and respect for the members of your profession, as they are of necessity business and legal advisers, as well as medical advisers. They are even moral and spiritual advisers to a great extent. As President of the Buffalo Chamber of Commerce, I recognize in the medical profession the medium through which a great deal can be done to elevate the standard of civic life.

The optimistic atmosphere that is so efficacious in the treatment of disease can be employed to

advantage in instilling a desire in the hearts and minds of men and women to co-operate in behalf of the community. Through the co-operation of the people of a community we are enabled to provide the institutions and the facilities that are essential to your profession. In many cases, men who have accumulated great wealth would willingly give all they possess if they could be restored to health. Health is the most important factor of every community; all else sinks into insignificance.

In order, therefore, that your profession may accomplish the greatest good, it is important that you have the support and co-operation of all the people. Commercial organizations are today recognized as a permanent necessity in every community and provide the medium through which people may get together for a common cause. I sincerely hope that in your respective communities you will encourage as far as possible the support and maintenance of such institutions as are directly identified with all that you are undertaking.

Buffalo is a convention city. Last year one hundred and sixty national and international associations assembled here. Of all the organizations that have met in Buffalo, I know of none that is doing better work than the medical profession, and I hope this meeting will prove one of the most successful in the history of your Society. I am sure, you as a profession will leave an impression upon the people of Buffalo, and I trust that your stay here will be such as to create in you a desire to return again.

**THE PRESIDENT:** The Medical Society of the State of New York is very fortunate in having present today the President of the American Medical Association, who has ever been a pioneer in medicine, and who through his work has permanently and prominently contributed to the welfare of humanity. I take great pleasure in presenting to you Dr. Victor C. Vaughan, Dean of the Medical Department of the University of Michigan, who will now address you upon the subject of "Recent Views Concerning Infection and Immunity."

Dr. Vaughan then delivered the oration on medicine,\* after which the general meeting adjourned.

WISNER R. TOWNSEND,  
*Secretary.*

#### MEETING OF THE COUNCIL.

A regular 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, May 21, 1915, at 10.10 A. M. Dr. W. Stanton Gleason, President, in the chair. Dr. Wisner R. Townsend, Secretary.

The meeting was called to order by the President, and on roll call the following answered to their names: Drs. W. Stanton Gleason, Montgomery E. Leary, Henry L. Winter, Thomas H. McKee, Wisner R. Townsend, Albert E. Sellenings, Alexander Lambert, James F. Rooney, Albert W. Ferris, Thomas J. Harris, Joshua

M. Van Cott, Frank Van Fleet, James E. Sadlier, James S. Cooley, Julius B. Ransom, William D. Garlock, William T. Shanahan, Carl G. Leo-Wolf.

A quorum being present, Dr. Gleason announced the meeting open for business.

As the minutes of the last meeting had been approved, they were accepted as printed in the *NEW YORK STATE JOURNAL OF MEDICINE* for May, 1915, Volume 15, page 203.

Moved, seconded and carried that the amendment to the by-laws of the Bronx County Medical Society be approved as follows:

**SECTION 6A.**—At a subsequent regular meeting of the Society, the President shall declare such applicant a member, provided, however, that before this declaration any member may demand in writing, if not present, a ballot on applicant elected. An affirmative vote of two-thirds of the votes cast shall be necessary to elect.

A letter was received from the American Society for the Control of Cancer urging the State Organization to endeavor to induce the County Societies to hold one meeting a year on cancer.

Moved, seconded and carried that the County Societies be urged to consider this matter and to present each year at their meetings at least one paper on cancer.

Moved, seconded and carried that Dr. Emil Heuel be appointed Alternate Delegate to the American Medical Association for one year to take the place of Dr. Willis E. Bowen, who had been elected as an Alternate for 1915-1916. As Dr. Bowen had previously been elected in 1914 for 1914-1915, the last election was null and void.

Moved, seconded and carried that a committee of three be appointed to prepare amendments to the by-laws in conformity with the recommendations in the President's address, approved by the House of Delegates, and also to prepare an amendment to Chapter XII of the present by-laws, which is at present ambiguous. The Chair appointed Drs. F. Van Fleet, F. M. Crandall and R. Waldo members of this Committee.

Dr. J. F. Rooney spoke of the difficulties that would be presented to the Committee on Legislation next year, and urged the support of the Council and the President in endeavoring to forestall legislation which was defeated last year and which would be introduced again next year. At his suggestion it was moved, seconded and carried that the Committee on Legislation be authorized to promote or oppose legislation with the consent of the Council.

Dr. J. F. Rooney nominated as a member of the Committee on Legislation Dr. S. J. Kopetzky, New York. Moved, seconded and carried that the name be confirmed.

Dr. A. W. Ferris nominated as members of the Committee on Arrangements Drs. A. S. Downs, Saratoga Springs; J. F. Humphrey, Saratoga Springs; J. B. Ledlie, Saratoga Springs; H. L. Loop, Saratoga Springs; F. J. Resseguie, Saratoga Springs; A. W. Thompson, Saratoga Springs; M. E. Van Aernem, Saratoga Springs. Moved, seconded and carried that the names be confirmed.

Dr. F. Van Fleet nominated as members of the Committee on Medical Research: First District: B. F. Curtis, Scarborough-on-Hudson; Simon Flexner, New York; A. F. Hess, New York; S. W. Lambert, New York; W. H. Park, New York; W. M. Polk, New York; H. E. Schmid, White Plains; J. S. Thacher, New York; W. R. Townsend, New York; J. E. Sadlier, Poughkeepsie. Second District: E. H. Bartley, Brooklyn; W. F. Campbell, Brooklyn; J. R. Kevin, Brooklyn; J. C. MacEivitt, Brooklyn; F. Overton, Patchogue; J. M. Van Cott, Brooklyn. Third District: J. D. Craig, Albany; A. Vander Veer, Albany. Fourth District: G. F. Comstock, Saratoga Springs; G. C. Madill, Ogdensburg; C. Stover, Amsterdam. Fifth District: T. Wood Clarke, Utica; C. B. Forsyth, Alexandria Bay; H. G. Locke, Syracuse. Sixth Dis-

\* See May, 1915, *JOURNAL*, page 167.

trict: R. P. Higgins, Cortland; B. W. Stearns, Unadilla. Seventh District: W. T. Mulligan, Rochester; J. F. W. Whitbeck, Rochester. Eighth District: N. G. Richmond, Fredonia; G. W. Cottis, Jamestown; V. M. Rice, Batavia; J. L. Butsch, Buffalo; B. F. Schreiner, Buffalo; H. U. Williams, Buffalo. Moved, seconded and carried that the names be confirmed.

Moved, seconded and carried that Dr. J. F. McKernon, New York, be appointed a member of the Committee on Scientific Work, on the recommendation of the President.

Dr. J. M. Van Cott presented the name of Dr. H. G. Webster, Brooklyn, as Secretary of the Section on Public Health, Hygiene and Sanitation. Moved, seconded and carried that the name be confirmed.

Moved, seconded and carried that officers and members of committees upon presentation of vouchers may have their railroad fares paid for attending regular meetings provided the bills be presented within sixty days after they have been incurred; otherwise they will not be paid.

That Delegates to the American Medical Association may have their railroad fares paid upon presentation of proper vouchers, on condition that they attend all meetings of the House of Delegates. Bills for said expenses must be presented for payment within sixty days after they have been incurred; otherwise they will not be paid.

The following was presented by Dr. T. J. Harris:

*To the Council of the Medical Society of the State of New York:*

The Chairman of the Committee on Scientific Work would recommend that the meeting next year should last two days and a half, that is, Tuesday and Wednesday and Thursday morning, May 16th, 17th and 18th; in other words, that we repeat the plan of the recent meeting in Buffalo, except that there shall be no afternoon session on the third day.

Tuesday morning, following the adjournment of the meeting of the House of Delegates, at eleven o'clock, there shall be a meeting of the entire Society to be addressed by some orator of reputation. Plans are under way to secure a distinguished layman. We shall be able to report more definitely about this at a subsequent meeting of the Council.

The first meeting of the Sections shall be held Tuesday afternoon at two-thirty. This arrangement will allow those who do not feel they can leave their homes the night before in order to arrive in time for the oration to leave Thursday morning and reach Saratoga on the train arriving between one and two. Wednesday will be given over to meetings of the Sections, as well as Thursday morning, the session Thursday morning to be a short one to allow those who desire to take an early train out of Saratoga in the afternoon.

To permit of adequate time for the consideration of the papers, we would advise that the Council recommend to the Committee on Scientific Work that not more than five papers for a session be arranged for. The right sort of discussion is generally held to be of great importance. In past years, on account of expense, the plan of having the various discussors write out their discussion has been pursued. All who have had any experience with the Section meetings agree that it has proved entirely unsatisfactory. Anything essential to the success of the meeting should be a legitimate charge upon the Society.

We would recommend, therefore, that arrangements be made to report the proceedings of the several Sections at an expense not to exceed four hundred dollars. We recognize that this is a considerable item of expense but it is our conviction that either proper reporting of the discussion should be provided for or all attempt in that direction abandoned.

The Publication Committee has pointed out the difficulty of incorporating with the papers the discus-

sions. If it is made clear to all essayists by the proper official that any paper which is accepted must be accepted without any condition as to the time at which it shall appear in the JOURNAL, we feel that this objection will be removed.

Respectfully submitted,

THOMAS J. HARRIS, *Chairman.*

Moved, seconded and carried that the portion of the Report on Scientific Work which refers to stenographic reports for the Scientific Session be referred to the Committee on Scientific Work with power.

Moved, seconded and carried that the meeting in Saratoga Springs in 1916 last two and a half days, and that the Committee on Scientific Work act as a Committee on Publicity to provide the lay press with such material as should be given to the public.

Dr. A. W. Ferris, Chairman of the Committee on Arrangements, reported progress, and stated that by the December meeting he would be able to give the Council some definite information.

Moved, seconded and carried that the Treasurer of the State Society be authorized to pay Mr. Lewis \$133.00 for extra expenses incurred during the past year.

Moved, seconded and carried that the report of Dr. Lytle, Chairman of Committee on Arrangements, be referred to the Committee on Finance with power.

Moved, seconded and carried that the next meeting of the Council be held at the State Society rooms, 17 West 43rd Street, New York City, on December 10th, at 10.00 A. M.

There being no further business, the minutes were approved as read, and the meeting adjourned at 12.30 P. M.

WISNER R. TOWNSEND, *Secretary.*

## 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.

ALVEOLODENTAL PYORRHEA. By CHARLES C. BASS, M.D., Professor of Experimental Medicine, and FOSTER M. JOHNS, M.D., Instructor in the Laboratories of Clinical Medicine at the Tulane University, Medical College, New Orleans, La. Octavo volume of 167 pages, with 42 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$2.50 net.

DIARRHEAL, INFLAMMATORY, OBSTRUCTIVE AND PARASITIC DISEASES OF THE GASTRO-INTESTINAL TRACT. By SAMUEL G. GANT, M.D., LL.D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum, and Anus at the New York Post-Graduate Medical School and Hospital. Octavo of 604 pages, 181 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

1914 COLLECTED PAPERS OF THE MAYO CLINIC, Rochester, Minn. Octavo of 814 pages, 349 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$5.50 net; Half Morocco, \$7.00 net.

LOSS OF HAIR. Baldness, Falling Hair, Prematurely Gray Hair and Seborrhœa Successfully Treated by the New Quartz Light Rays. Authorized translation from the German of Dr. FRANZ NAGELSCHMIDT, by RICHARD W. MULLER, M.D. William R. Jenkins Co., Publishers, Sixth Avenue and 47th Street, New York City.

MOTHERCRAFT. By SARAH COMSTOCK. Illustrated. Hearst's International Library Co., New York, 1915. Price, \$1.00 net.



## Book Reviews

**SOME AMERICAN MEDICAL BOTANISTS.** Commemorated in our Botanical Nomenclature. By HOWARD KELLY, M.D., LL.D. Delivered as a lecture before the Medical Historical Society of Chicago, 1910, and before the University of Nebraska, October 16, 1913. The Southworth Company, Publishers, Troy. 1914.

This biographical work traces charmingly the floral medical godfathers of America. It is a fair garden into which the author leads us, in which we meet the men whose search for remedies was keen in days when malaria and dysentery ravaged whole towns and paralyzed industry. The book is a key to how and why our botanical resources became what they are. One will feel better acquainted with lobelia and all the other drugs of like derivation after a reading of this work. To Kelly, too, "there is religion in a flower," and one of the sources of "piety." Kelly laments that times have changed and that other interests seem to thrill the boys of today. In botanizing he discovered a "pure, sweet and refining passion," which apparently absorbs him still. Nowadays science is Rockefellerized, and our young men are to be found, not in the closet, identifying specimens, and in the fields on botanical excursions, but in dance laboratories, studying the new steps. The search for galenicals is ended and medicine is Carnegieized, yet no memorials are left behind by men more enduring than *Darlingtonia*, *Gardenia*, *Claytonia*, *Torreya*, *Mitchella*, *Wistaria*, *Sarracenia* and *Poinsettia*, reminiscent forever of the great American demigods of the healing art.

A. C. J.

**SEXUAL ETHICS.** A Study of Borderland Questions. By ROBERT MICHELS, Professor of Political Economy and Statistics, University of Basle, Honorary Professor Faculty of Law, University of Turin. The Walter Scott Publishing Co., Ltd., Paternoster Sq., London, E. C. Charles Scribner's Sons, 597 Fifth Ave., New York. 1914.

Michels discusses with peculiar insight the borderland, unsolved sexual-psychological problems of life. His observations are empirical, rather than strictly scientific, but there is no phase of the subject in hand with which he appears to be unacquainted and which he does not illuminate without recourse to unintelligible jargon. Thus he not only draws upon solid research, but upon the writings of innumerable poets and novelists. His book is far franker than any to which readers of English works are accustomed, and he makes no concessions to puritanical pruderies. It is strong meat that he offers, and the babes had best take care. All his views are ultra modern and advanced with a vengeance and in our judgment eminently sound. A distinguished and fascinating style marks his writing, and it is further characterized by an irresistible soundness and sanity of thought and pleading, before which the most Philistian of minds must give way and with which the liberal-minded will be captivated. Especially hard upon the Anglo-Saxon mind will bear his argument that the "pure woman is a fiction of the libertine, an idea that he shows never originated in the brain of a moral-thinking man" (p. 214 *et seq.*). "A woman who is devoid of a certain measure of animality, and that by no means a small measure, must be regarded as a degenerate." He makes an amusing comment on homosexuality, said to be so common in Germany. A malicious jester visiting Germany for the first time, having seen the collection of ladies appearing at the annual rectorial ball of a university town, remarked that now at last he was able to understand the notorious prevalence of homosexuality among German men. The book is a veritable mine of psychosexual data, masterfully dealt with.

A. C. J.

**DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT.** By ANTHONY BASSLER, M.D., Professor Clinical Medicine, and Visiting Physician N. Y. Poly-clinic Medical School and Hosp.; Chief Gastro-Enterologist, German Poliklinik. Second edition, revised and enlarged, illustrated with numerous half-tone and line text engravings, 75 full-page and half-tone plates (with over 100 figures) plain and in colors. Philadelphia: F. A. Davis Company, publishers, 1913. Price, \$6.00 net.

Previous reviews of Dr. Bassler's work on the stomach have dealt with its conciseness, comprehensiveness and directions. One may properly emphasize the wealth and excellence of the radiographic reproductions, many of which are unusually clear. The work as a whole contains a general survey of the subject that is comprehensive and is well arranged and forceful and is presented with sufficient brevity and directness to recommend it as an excellent work for all around purposes.

HENRY G. WEBSTER.

**MANUAL OF SURGERY.** By ALEXIS THOMPSON, Prof. Surgery, University Edinburgh, Surg. Edinburgh Royal Infirmary, and ALEXANDER MILES, Surg. Edinburgh Royal Infirmary. Vol. 3. Operative Surgery. Second edition, with 255 illustrations. Edinburgh, Glasgow and London. Henry Frowde and Hodder & Stoughton. Oxford University Press, 35 West 32d Street, New York. 1913. Price, \$3.50.

The present edition appears in much the same form as its predecessor, published in 1912.

Twenty-five additional illustrations enhance this volume. The Basle anatomical nomenclature has been adopted. The old terminology, however, is preserved in brackets for guidance of those as yet unfamiliar with the new terms.

The chapters on operations upon the stomach and intestine show revision. Ball's operation for the relief of pruritis ani is added. Other additions are noted which bring the work up to date.

The work is admirably written and reflects the best present-day teaching of operative surgery.

ROYALE H. FOWLER.

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## Deaths

LOUIS F. BISCHOF, M.D., New York City, died May 23, 1915.

SIGISMUND COHN, M.D., New York City, died May 18, 1915.

GEORGE P. GRIFFING, M.D., Brooklyn, died May 5, 1915.

GEORGE G. LEMPE, M.D., Albany, died May 17, 1915.

FAYETTE H. PECK, M.D., Utica, died May 24, 1915.

HORACE R. POWELL, M.D., Poughkeepsie, died December 30, 1914.

SAMUEL H. RABUCK, M.D., Huntington, died March 3, 1915.

JOHN V. E. WINNIE, M.D., Sidney, died April 26, 1915.

SAMUEL B. WARD, M.D., Albany, died June 3, 1915.

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# NEW YORK STATE JOURNAL OF MEDICINE

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JULY, 1915

No. 7

## EDITORIAL DEPARTMENT

### THE CANCER MENACE.

THE cause, prevention and cure of cancer are problems which have remained unsolved up to the present moment. Like a thief in the night cancer steals noiselessly upon and assaults us with a lethal blow while we are still unconscious of his presence. Fortunate is the victim who detects his presence in time to ward off his stealthy attack which if not repelled becomes murderous in severity, until death mercifully ends all.

The toll of cancer victims in the United States alone is about 75,000. Distributed over so wide an area this appalling death rate does not impress the public with the prowess of this arch enemy to life, nor is it aware of the intensity of the accompanying torturing pain preceding death.

The apathy of the general public, the opposition of fanatics, and the condemnation of fools to research work is undeniably discouraging to self-sacrificing efforts to conserve the nation's health. But in the face of opposition and discouragements we continue on our thankless course, finding our reward in the fulfillment of a sacred self-imposed duty. A call for assistance has been sounded by the Commission on

Cancer of the Medical Society of the State of Pennsylvania, to combat this ever present menace, by an individual study on the part of every practitioner of medicine, not only of the initial symptoms of cancer but also of the precancerous evolutionary state in order that, that beacon of safety, an early diagnosis, may be followed by immediate surgical intervention.

The very early diagnosis of cancer is difficult, exceedingly difficult. This is especially true of internal cancer, while on the other hand, superficial manifestations on integumental or mucous surfaces, while they lend visual proof to our aid, almost invariably take on the malignant cell changes under the protection of what we look upon as a simple benign growth.

Instruction of the laity regarding cancer, its early symptoms and the most frequent parts of the body affected, will go far toward reducing its frightful mortality. From an analysis of 400 cases received and tabulated from surgeons' reports, it is shown that in superficial cancer only 68 per cent were operable when they came to the surgeon, and of the deep seated cancers only 48 per cent or less than one-half were operable. Another important fact derived from these

reports is that in 39 per cent of the superficial cancers and in 46 per cent of the deep-seated cancers there had been a precancerous condition or a chronic irritation. In other words, in almost one-half of the patients who were sent to the surgeons with a fully developed cancer, there had been a previous condition which might have been cured and the development of cancer arrested. It was also shown that in the superficial cases the patients were aware of their condition but probably unaware of its nature, on an average of one year and six months, and in deep cancers, the signs of the disease were evident to the patients one year and two months before they sought the aid of a surgeon. It is difficult to understand how a physician, even the greatest dunderheads in the ranks, could permit a patient with a non-healing or recurrent sore of an indeterminate character, to pass out of his office without a warning of its dire probability. Yet investigation has shown that in superficial cancer on an average one year and one month have elapsed between the time the patient consulted the family physician and the time he came for operation. These verified facts should make us pause and place the blame where you will, with the public, patient or physician, the needlessness of this deplorable state is self-evident. Furthermore, it teaches the fatuity of temporizing with what appear to be trivial growths, moles, lesion or excrescences exhibiting departure from normal tissue, especially so when they show commencement of cell changes. Radical removal with the knife should be at once resorted to and an examination made by a competent histologist of the sides and bases of the excised portion to determine if the excision has been complete.

In the mind of the laity cancer is associated with its advanced or terminal stages. Aware of the fearful mortality following operations for its cure in these well-nigh hopeless cases, the very name of cancer fills them with terror and allied with this is the fear of an operation by the knife. When their suspicion is aroused by the word of the physician or an acquaintance that the simple growth is potential for malignant

changes, they seek its removal by some paste, medication, or non-cutting operation so extensively advertised by unscrupulous quacks. Every surgeon has had not one but many cases where he had advised the removal of a suspicious small sore on the lip or tongue, to have his patient state he would consider his advice. A return visit would be made in many instances after horrible destruction of the tissues had taken place—the sufferer repeating the well-known story of fear of the knife. Treatment by one quack after another, the duplicity of the charlatan and the fatuity of the patient leaving nothing for the surgeon to do but the signing of a death certificate.

The campaign now so vigorously waged by medical and social organizations is to impress upon the mind of every individual, the knowledge that cancer in its incipiency is curable by operation. The fear of being told by a physician that a certain growth is cancer should not deter but rather hasten a consultation, and submission without delay to an operation, if so advised; the method to be determined by the surgeon, be it through the knife, X-ray or radium. The former is certain of execution, the two latter are followed by indeterminate and often harmful results.

The theories of the cause of cancer outside of an academic knowledge of the investigations of the histologist and pathologist, serve us to but little purpose. "There can, however, be no doubt that various non-specific physical or chemical stimuli are among the best established factors in its pathogenesis. Ordinary somatic cells without any predisposing embryonic maldevelopment or without post-fetal misplacement can in certain cases become transformed into cancer cells under the influence of long continued irritation." For example, the exposure of the abraded surface of the cervix uteri to the acid vaginal discharge—the nicotinized pipe stem to the lip—pitch to the skin of workers in tar, etc., etc. Every surgeon worthy of the name will by vocational instinct detect precancerous tendencies or at least the incipient phe-

nomena of superficial cancer growths. Cancers of the internal organs do not as a rule come under his observation until the symptoms denote progress, but in all cases he supposedly acts in accordance with the tenets of modern surgery. We will not attempt to discuss the methods adopted for the cure or alleviation of cancer, but confine ourselves to a short description of the more common selective location of cancer and its diagnosis, in an implied appeal to the family doctor, nurse and midwife, under whose observation the patient with commencing cancer is most likely to fall, to devote more time to the study of the subject by reading the last word on the disease in current medical literature.

Cancer of the breast is more common in women over forty years of age, but may be found at any age. Rodman in an analysis said that over one-fifth occurred in women under forty. It is more frequently in its axillary superior half. That portion of the gland behind the areola is next in point of frequency involved. If a growth has caused either retraction of the nipples or dimpling the skin at the same time, it is almost unquestionably cancer.

In about ten per cent of the cases in its early stages, it cannot be recognized clinically, owing to the difficulty of differentiating between malignant and benign growths. A safe plan in every case when there is a hardened portion of any portion of the gland is to refer to a surgeon for diagnosis.

Cancer of the uterus. Cancer of the uterus is most common between the thirty-fifth and fiftieth years but has been found to exist at the eighteenth year. Any bloody or watery vaginal discharges that cannot be definitely accounted for should lead to an examination. If on bimanual examination the cervix is found to be rough, friable and bleeding, the diagnosis of cancer is usually certain. In early diagnosis of cancer of the cervix the surface is nodular, and springing from it are fine finger-like outgrowths which bleed readily. An eroded nodular cervix presents to the eye a picture of clinical epithelioma of the cervix. Instead of treating such as an

erosion it is better to excise a portion of the eroded surface and together with scrapings from the endometrium submit them to a pathologist. Bear particularly in mind that all irregular bloody discharges from the genital tract are the first symptoms of early cancer. In such cases make a careful examination, and much of the obloquy now cast by surgeons upon the family physician for his negligent delay will be overcome.

Cancer of the stomach, pancreas, colon, gall bladder—appropriately designated as internal cancer is a serious and difficult condition in its earlier stages to diagnose. The symptoms are so intimately related to what are known as ulcer symptoms, and these are so intermingled with classic symptoms of dyspepsia that usually a prolonged course of medical treatment is followed, before being referred to the surgeon. If the profession in general would but realize the simplicity and safety of an exploratory laparotomy in doubtful abdominal diseases many lives would be saved.

Cancer of the rectum. As in other cases cancer of the rectum comes on insidiously, the first symptoms being those of discomfort relieved by an evacuation of the bowels and discharges of blood and mucus. If situated high in the rectum it may not produce discomfort until obstructive symptoms appear. If low down a digital examination readily recognizes the growth.

Cancer of the genito-urinary organs. The chief symptom of cancer of the kidney is blood in the urine and the appearance of a swelling on the affected side. Blood in the urine is the earliest symptom. It occurs in about 70 per cent of the cases and it may or may not be accompanied by pain. Early diagnosis can only be definitely determined by a cystoscopic examination and a Roentgen ray picture. Cancer of the bladder is usually the result of changes in benign growths. Blood in the urine is the chief symptom.

Cancer of the prostate. Mechanical obstruction to the flow of the urine, pain, bleeding, impairment of sexual power and loss of weight are the chief symptoms.

It may be that these words of admonition are unnecessary—we hope so.

## Original Articles

### PROPHYLACTIC TREATMENT AND EARLY DIAGNOSIS OF CANCER OF THE UTERUS.\*

By JOHN A. McGLINN, A.B., M.D.,  
PHILADELPHIA, PA.

IT may not be out of place in opening this symposium on cancer of the uterus to recall to your attention the ravages of this disease, so that you may appreciate the importance of the many lessons you will hear today. Cancer is a disease of antiquity. The name is supposed to have originated with Celsus, who likened the yellow and discolored veins and lines radiating from seat of the disease to a resemblance of a crab. Scleroma of the uterus was described by Galen as a hard tumor which originated in phlegmon of the organ and which might be of long duration. Paul of Aegina recognized scleroma of the uterus, mentioned by Galen as a form of uterine cancer. Cancer of the uterus was also known to Hippocrates and other ancient writers.

Though this disease was known to the ancients, it was not until methods of more accurate diagnosis and the registration of deaths came into vogue that we were able to fully appreciate its terrible ravages. Williams was one of the first to depict in a graphic manner the incidence of this disease. In 1909 I made a study of the cancer question in the United States and reported my results before the Philadelphia County Medical Society. As the conclusions reached at that time are just as true today, I will quote from that paper:

"In England the Registrar-General's report shows that in 1906 out of a total of 141,241 deaths of males over 35 years of age, 12,695 died of cancer, and out of a total of 140,607 deaths of females over 35 years of age, 17,671 died of cancer. This means that one man in eleven over 35 years of age will die of cancer, and that one female in eight over 35 years of age will die of cancer. In England the cancer death rate for 1905 was for each 100,000 living 75.6 for males and 100.5 for females. The corresponding phthisis rates being for males 134.7 and females 95.7. This meaning that more women die in England of cancer than of pulmonary tuberculosis.

In the registration area of the United States in 1906 out of a total death rate for males at all ages of 358,286 there were 11,166 who died of cancer, and out of a total of 299,819 for females, 17,854 died of cancer. This showing that one male out of 32 will die of cancer and one female out of 11.2 will die of cancer. The corresponding phthisis rates being for males one out of 9.9 and for females 1 out of 10.2. This

shows that almost as many women die of cancer as of phthisis.

In the same area for 1906 out of a total death rate of 186,944 for males over 35 years of age, 10,644 died of cancer, and out of a total of 156,465 for females over 35 years of age, 16,879 died of cancer. This means that one man in 17.5 over 35 years of age will die of cancer, and one woman in 9.2 over 35 years of age will die of cancer. The corresponding phthisis rates for this age period being for males 1 in 9.9 and for females 1 in 14.1. In other words, more women past the age of 35 die of cancer than of pulmonary tuberculosis. If we study this phase of the question a little more closely the results are even more startling.

Basing our results upon computations from the registration area for 1906, we find that between the ages of 35 and 39 one man out of 48 and one woman out of 13 will die of cancer; between 40 and 44, one man out of 28 and one woman out of 8; between 45 and 49, one man out of 20 and one woman out of 6; between 50 and 54, one man out of 14 and one woman out of 5; between 55 and 59, one man out of 12 and one woman out of 6; between 60 and 64, one man out of 12 and one woman out of 7; between 65 and 69, one man out of 12 and one woman out of 8.

It may be asked, as cancer is a disease of middle and advanced life, and as the tenure of life would be short at best, is there much to be gained in saving life outside of sentimental reasons? We find that the expectation of life at 35 years is 31.78 years; at 45, 24.54 years; at 55, 17.40 years; at 65, 11.10 years; and at 70, 8.97 years. Taking the expectation of life at various years, we find for the number of people who died of cancer in the registration area in 1906 between the ages of 35 and 70, a total saving of life, had they been cured of their disease, of 373,574 years. Allowing 20 cents an hour for 300 working days a year, this means a loss of \$224,144,400 in one year for one-half the United States.

The population for the registration area for 1900 for males over 35 years of age was 4,933,424; females, 4,767,304.

If the death rate already given for this period of life would hold true and not increase, as it is most likely to do, out of this immense number of people living at that year, 281,909 men and 518,185 women have or will die of cancer. Surely cancer is a problem that is worthy of every effort that can be made for its control.

With the increase in cancer mortality and decrease in that of consumption, it is only a question of a short time before the foul plague will displace the white plague as the great scourge of the world. If the present increase in cancer mortality and decrease in phthisis mortality be maintained, the deaths from cancer will equal the deaths from consumption in the registration area by the year 1931.

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 29, 1915.

The foregoing conclusions have to do with cancer in general, while today we are specifically interested in cancer of the uterus.

Many observers contend that taking cancer as it affects both men and women, the uterus is the most frequent site of the disease. Thus Welch, who studied 31,482 cases collected from the clinics of Vienna, Paris, Berlin, Wurzburg, Prague and Genoa, found the stomach the primary seat of disease in 21.4 per cent of the cases and the uterus in 29.5 per cent. He states: "If the sum total of all the cases is taken, the conclusion would be that about one-fifth of all primary cancers are situated in the stomach and somewhat less than one-third in the uterus." Reed states, quoting from the registrar-general's report, that in England between 1847 and 1861, the deaths from cancer were 87,348; of these 25,633 were males and 61,715 females. About 25,000 of the latter succumbed to cancer of the uterus. Byford states that one-third of all cases of cancer in women occur in the cervixes of multi-paræ. Hirst says that the uterus is the most frequent site of cancer in the human body.

I hardly agree with these statements, as I believe that the stomach is the most frequent site of the disease. I have recently shown that out of a total of 140,088 deaths from cancer, the stomach and liver were the site of the disease in 36.4 per cent and the female genitals in 14.7 per cent. Of course, this statement does not show the relative frequency of the stomach and uterus as the site of the disease, but it is fair to infer from it that the stomach is more often involved than the uterus. Again, the American statistics show the stomach to be the site in 43.06 per cent in males, and 24.47 per cent in females; so the combined table would show 38.76 per cent for the stomach against 27.68 per cent for the uterus. These figures are nearly in accord with Virchow, who, stated that the stomach was the primary seat of cancer in 34.9 per cent of all cases; d'Espine's figures are even higher, he showing in his studies the stomach to be the site in 45 per cent of cases. Even if figures vary as to the frequency of primary cancer in these two organs, all available statistics agree that the uterus is the most frequent organ to be attacked primarily in women.

That cancer of the uterus is a disease worthy of our utmost attention is undoubted. A German author states that one per cent of women between forty and fifty die of cancer of the uterus; that there are more deaths from this cause than from labor, and that the yearly death rate from cancer is greater than the mortality of the Franco-Prussian war."

Duhrssen, in commenting on the horrible increase of cancer of the uterus, states that "25,000 die annually in the German empire from carcinoma uteri, or three times as many as die in childbed from all causes." Spencer has shown that "in England and Wales during the years

from 1901 to 1905, 19,645 women died of cancer of the uterus. The disease in these countries carries off nearly 4,000 adult women annually, the great majority of whom are mothers, usually mothers of large families."

That cancer is the most important lesion of the genital tract that we have to consider admits of no controversy. It is the most frequent and above all others the most fatal. The annual average of deaths during the years from 1901 to 1905, inclusive, was from metritis, 78; uterine hemorrhage, 89; uterine tumor, 581; other diseases of the uterus, 486; ovarian tumor, 430; diseases of the tubes, 559; others diseases of the female genitals, 112; making a total death rate of 2,335. Cancer of the female genitals for the same period had an annual average death rate of 3,263. In other words, cancer of the female genitals kills about one and one-half times as many women as all other diseases of the genital tract combined. During this same period the annual average death rate from causes incident to childbirth was 4,643. These deaths were divided as follows: Accidents of pregnancy, 549; puerperal hemorrhage, 337; other accidents of labor, 295; puerperal septicemia, 2,057; puerperal convulsions, 911; puerperal phlegmasia alba dolens, 4; other puerperal accidents, 488; puerperal diseases of the breast, 1. It will be seen from these figures that while the deaths from all causes incident to child-bearing exceed those from cancer of the genital tract, cancer kills more than any one puerperal cause.

In 1907 cancer of the female genitals killed over three times as many women as abdominal tuberculosis; five times as many as venereal diseases; fourteen times as many as tumor; nearly twice as many as endocarditis; seven times as many as ulcer of the stomach; twice as many as cirrhosis of the liver; almost as many as typhoid fever; nearly twice as many as appendicitis; five times as many as were killed in all railroad, street car, horse and carriage and automobile accidents.

The age incidence of cancer of the uterus is shown in the following table:

| Age  | Cases | Percentage |
|--|-------|------------|
| Under twenty years . . . . .               | 7     | 0.3        |
| Twenty to twenty-four years . . . . .      | 6     | 0.2        |
| Twenty-five to twenty-nine years . . . . . | 43    | 1.9        |
| Thirty to thirty-four years . . . . .      | 103   | 4.5        |
| Thirty-five to thirty-nine years . . . . . | 205   | 9.0        |
| Forty to forty-four years . . . . .        | 288   | 12.0       |
| Forty-five to forty-nine years . . . . .   | 413   | 18.0       |
| Fifty to fifty-four years . . . . .        | 344   | 15.0       |
| Fifty-five to fifty-nine years . . . . .   | 276   | 12.0       |
| Sixty to sixty-four years . . . . .        | 230   | 10.0       |
| Sixty-five to sixty-nine years . . . . .   | 164   | 7.0        |
| Seventy to seventy-four years . . . . .    | 121   | 5.0        |
| Seventy-five years and over . . . . .      | 88    | 3.5        |
| Unknown . . . . .                          | 3     | 0.1        |

It will be seen from this table that the age of greatest frequency is between forty-five and forty-nine (18 per cent). It should be borne in mind, however, that, while this is the most frequent age period, cancer may occur at any age, so that, while the consideration of age in a particular case is of importance, it should not be given sufficient weight in the presence of suspicious symptoms to eliminate the presence of the disease.

Having shown the terrible ravages of the disease, let us now devote our time and energy to the solution of the problem. It is not my purpose to enter into a discussion of the pathology and etiology of cancer. The pathology of cancer is well understood and it would be presumption on my part to come to Buffalo, the home of one of the greatest workers in cancer research, and offer any new ideas or even to discuss except in a general way the modern theories of the causation of cancer. It has always been a source of pride to me that I got my early training and enthusiasm in the same institution as did Dr. Harvey Gaylord, "Old Blockley."

Out of all the work that has been done of recent years in cancer research two facts stand out undisputed. First, that there is always a precancerous state, and second, that in the beginning cancer is a local disease. These two facts being admitted, we can approach the question from the standpoint of prevention and of cure. When I approach this question from the point of view of prevention and mention the time-honored themes of child-bearing and lacerations of the cervix, etc., as causative factors, I know that I will meet with objections. I am entirely familiar with the papers that have been written to disprove these contentions. No matter what pathologists and statisticians may say to the contrary, I am sure that, clinically, lacerations of the cervix, with the attending sequela, are important factors in the development of cancer of the cervix. This belief is not original with the modern thinkers. As early as 1761 Ashwell, in his book on the diseases of women, recites the histories of a number of women who were cured of cancer of the uterus by the application of iodine in the early stages of the disease. He noted that the cases of ulceration—to him, cancer—that received this treatment were cured and that there was no further development of cancer, while similar cases that were not treated developed cancer of the cervix and eventually died. Of course his conclusions were wrong. The lesions he was treating were erosions and ulcerations of the cervix and not cancer, but he established a valuable lesson which is only now being appreciated. In other words, the erosions and ulcerations were the precancerous lesions, and these being cured, of course cancer did not develop; when they were neglected, on the other hand, cancer did develop. If it is true that irritation from a chronic gas-

tric ulcer precedes cancer of the stomach in the majority of cases, that chewing of the betul nut produces cancer of the mouth, that the constant irritation of heat produces cancer of the abdominal wall in the natives of Kashmir, that cancer of the scrotum was common in sweeps, due to the constant irritation of soot, and that aniline and tar workers are subject to cancer, why is it not equally true that the constant irritation and chronic inflammatory lesions due to laceration of the cervix are the predisposing causes of cancer of that part of the uterus? I have searched the literature in vain to find any series of cases where cancer developed in cervices that had been repaired or amputated. Personally, in a large experience in cancer I have never seen such a case. What better answer to the objectors is there than this? I will not take the time to quote the views of men who favor this contention as I know you must be entirely familiar with them. Personally, I am so absolute in my belief that this is so that in my own work I have ceased preaching the need of early diagnosis and have adopted the slogan that the time to cure cancer is before it develops. If we recognize this truth, that lacerations of the cervix and their complications are the predisposing cause of cancer of the cervix, it stands to reason that if we cured these conditions before cancer developed, we would save many of the thousands of women who die annually of this disease. Ashton sums up the question in the following forceful paragraph: "The obstetrician, before discharging a patient after confinement, should examine the cervix, and if a laceration is found to be present, it should be repaired in three or four months. It should also be the duty of the general practitioner to examine the cervix of all women who consult him for pelvic symptoms, and urge a repair operation if a laceration is found. And, finally, I would urge, as a routine practice, the examination of every woman over 40 years of age who has borne children, and the immediate repair of all lacerations of the cervix that may be discovered." My personal opinion is that in the latter cases an amputation of the entire cervix is a better prophylactic measure than a mere repair.

My reasons for this opinion are that many cases of cancer of the cervix develop from the endometrium lining of the cervical canal. A mere repair operation does not remove this site of danger, whereas a high amputation of the cervix removes every particle of tissue that might be the beginning point of malignant disease. It is hardly advisable to do a high amputation of the cervix on a woman who is still in the child-bearing period. At times it is not, perhaps, even wise to do a repair operation. In many of these cases, however, erosions and eversions are present and they should be cured. While many forms of treatment will accomplish their cure, I am satisfied from my own experi-



ence that the dessication method of Clark is the best.

As to cancer of the body of the uterus our knowledge is not as definite as in that of the cervix. We do know that fibromata and adenomata are particularly prone to undergo carcinomatous or sarcomatous degeneration, and it is fair to assume, though it cannot be definitely proven, that chronic endometritis, irrespective of the cause, is apt to act as an irritant to cell proliferation and be a predisposing factor of cancer. It was formally taught that fibromata were likely to undergo atrophy as the woman approached the menopause, and consequently the advice was given not to operate near this period, but to wait for a favorable change in the tumor; the teaching even went as far as to advise the production of an artificial menopause by removing the ovaries. This teaching was given its death knell by the classical paper of Noble, who showed that the tumor, instead of becoming smaller and less dangerous, became, as a matter of fact, far more dangerous on account of the very large number of cases in which it underwent malignant degeneration. My feeling, radical as it may seem, is that any fibroid of the uterus, irrespective of its size or the symptoms produced, is a dangerous tenant and had better be evicted. In this connection I also believe that all forms of chronic endometritis, as well as their primary cause, should be cured by proper methods.

As to cure. Can cancer be cured? Undoubtedly. How? By making an early diagnosis and applying the proper remedy.

There is a time in all cases of cancers when the disease is strictly a local condition and if removed at that stage of the disease the patient will be permanently cured. There will also come a period in all untreated cases when the disease has advanced beyond the hope of removal and cure by any known measure.

Wertheim reports 22.5 per cent of cures in all cases of cancer of the cervix. Other German operators report as high as 48 per cent of cures in operable cases. In this country the cures reported in all cases of cancer of the cervix vary from 1.5 per cent to 8 per cent. This remarkable difference in results between the two countries is readily explainable. The trouble is that even in those cases that are considered operable the diagnosis has been too long delayed to give the best results.

With our present knowledge, what, then, is the solution of the problem? The making of an early diagnosis and the immediate resort to treatment.

How are we to make an early diagnosis? Surely, only by getting the patient early and then being able to recognize the condition. The only way that we will ever be able to induce patients to seek early advice will be through a continued campaign of education, of which I will speak later.

As to the diagnosis, how is it to be made and how early must it be made to be of much value. In spite of the wonderful statistics reported, particularly in Germany, the more I see of cancer, the more I am of the opinion that if the disease can be recognized without the aid of the microscope; it is of little value from the standpoint of permanent cure. Consequently the physician should always be on his guard to interpret properly the earliest symptoms of the disease and to eradicate from his mind certain moss-grown heresies of medical lore. The first of these is that a woman has to be at or near the menopause before she can develop cancer, and the second is that menorrhagia or metrorrhagia are normal at the menopause. Increased bleeding at the menopause is never physiologic; it is always pathologic and we better be sure that it is not due to cancer before we ascribe it to anything else. Child-bearing women should be educated to consult their physician at regular intervals whether they have any suspicious symptoms or not. If they have suspicious symptoms they should seek advice immediately. If the physician finds any suspicious lesions or symptoms he should immediately make an effort to find their true significance. If suspicious lesions present on the cervix a piece should be removed and sent to a pathologist for an examination. If suspicious symptoms, such as bleeding or discharge from the uterus, are present, unless there is a well-defined cause for their presence, the uterus should be curetted and the scrapings examined pathologically. It has been my routine for a number of years to have curette scrapings examined for malignancy no matter what has been the indication for the curettement or the age of the patient. As a result of this procedure I can point to a number of patients apparently cured of cancer where cancer was never suspected from the symptoms at the time of the curettement.

In reference to the pathologic findings, it must be remembered that a negative diagnosis never rules out the presence of cancer and that patients presenting suspicious symptoms must be kept under observation for a long period in spite of the diagnosis. Having spoken in a general way of the methods by which we can make an early diagnosis, allow me to conclude by saying a few words in reference to the necessity of an educational campaign.

Three classes are to be educated: the public, the general practitioner and the surgeon.

While I have no apologies for the profession for their shortcomings, too much blame is frequently placed undeservedly on the shoulders of the general practitioner for his failures to bring his case to early operation. The blame frequently rests with the patient in not consulting the physician early enough and refusing to follow his advice when given.

Taussig, in an article entitled "Recent Experience in the Treatment of Uterine Cancer,"

states: "The blame for the late recognition of uterine cancer rests mostly on the woman herself. In about 90 per cent of the cases she did not at once consult a physician. In about one-third of the cases the carelessness or ignorance of the physician was partly or wholly responsible for the delay."

The question of the education of the public presents many difficulties. Many plans of education through the medium of the public press and popular magazines have been proposed and vigorously objected to, the principal objection being that a state of cancerphobia would be produced which would be more serious in its results than the disease itself. Personally, I do not believe that this would be true in relation to cancer any more than it has been in appendicitis and tuberculosis, and no one can fail to recognize the immense value in life saving in these two diseases as the result of publicity. That education of the public in reference to cancer will bear fruit and be free from evil consequences has been amply proven in Germany, where, as the result of Winter's educational movement, the number of cases of cancer of the cervix coming to treatment has increased by 80 per cent since the beginning of his campaign. More than that, the cases are seen earlier than ever before, and no cancerphobia has developed. The family physician can wield a potent power in the education of the public by removing the fallacies for which his brethren in the past have been mainly responsible, and instilling into their minds the truth in relation to the hopes of cure and the safety of treatment. And, finally, the time has come when we should throw off the shackles, not of ethics but of tradition. We should take the public into our confidence and relieve medicine of the shroud of mysticism which has so long encompassed it. In no way can we do it better than by speaking freely through that best of all educators, the public press.

The physician himself needs to be educated. He should realize the importance of this subject and familiarize himself with the methods of early diagnosis of the disease. Or, if the diagnosis requires special training, he should at least be ever alert to refer his cases early for an opinion. I do not believe that all the errors of diagnosis of cancer are due to ignorance on the part of the physician, but I do believe and know that many are due to the worse sin of carelessness. Surely one cannot plead ignorance in telling a woman, during the cancer epoch of her life, that her menorrhagia or metorrhagia is due to the menopause and rest content with that diagnosis without ever making a vaginal examination. And yet in my experience that is precisely what has occurred in many inoperable cases of cancer of the cervix. I have seen many sad cases of mothers condemned to a terrible death as the result, I might almost say, of criminal negligence. There is no ex-

cuse for such conditions to exist; it is not ignorance nor even stupidity; it is wilful neglect.

The great lesson which we physicians should learn is that our profession entails a great responsibility. Sacred lives are placed in our keeping and our first duty is to give the best that is in us to the conservation of life and happiness of our patients. If we fully realize this we would find time to study our cases and treat them properly.

In conclusion, the surgeon himself needs to be educated in this subject of cancer. Here is a disease in which the so-called brilliant surgeon, the rapid operator, may be and often is a menace. There is little of the theatrical brilliancy in an operation for cancer. It is the surgeon who is conscientious, patient, painstaking, who realizes his responsibilities and who has mastered the pathology of the condition, who will achieve results.

### THE TECHNIC OF APPLYING HEAT IN THE TREATMENT OF INOPERABLE UTERINE CARCINOMA.\*

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THE description in writing of the technic of the application of any surgical procedure of necessity must leave much to be desired in the way of completeness. The method that I shall outline depends for its effectiveness upon the fact that carcinoma is destroyed when the temperature in the mass is raised to 113 degrees F. (45 C.). On the other hand, normal tissue cells are not affected until the temperature rises to from 132 degrees F. to 140 degrees F. (55 degrees C. to 60 degrees C.). I wish to emphasize this because many surgeons who are making use of the method still have the idea that it is necessary to produce a degree of heat sufficient to burn up the parts involved.

This defeats the purpose of the treatment which for its effectiveness depends upon the production of a low degree of heat, and not of fire. In other words coagulation, and not carbonization, of the tissues involved is the effect desired. This is well shown by the record of some of my experimental work previously published.†

In my own clinic, I am in the habit of demonstrating the comparatively slight degree of temperature maintained in the electric treating iron by covering it with absorbent cotton. When the treatment is finished, the cotton is hot, but has not been altered in either color or texture. This merely indicates, I repeat, that a burning temperature is not used in the heating iron.

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 29, 1915.

† Best Methods of Discouraging the Activity of Inoperable Cancer. A Study of Heat in Cancer. *The Journal American Medical Association*, May 23, 1914, Vol. 62, pp. 1631-1634.

My experimental work has shown two important things: that this low degree of heat has an infinitely greater penetrating power, as far as distance is concerned; and that the high degrees of heat, producing a charcoal core, permit of only a surprisingly limited dissemination of heat. Paradoxical, then, as it may seem, especially when we forget physical laws, my "cold iron" has a greater capacity for killing cancer cells than has the cautery iron heated to a cherry red or even higher degrees of heat. Part of the explanation is that great heat immediately produces the carbon core just mentioned, while the low degree of heat does not. This "cold iron," then, not only permits greater penetration of heat in the cancerous mass, but, as can be readily appreciated, the rectum, bladder and ureters are in much less danger of being injured by a degree of heat sufficient only to make the pathological tissues thoroughly hot than by an amount which will immediately destroy them. A rather crude method—but a thoroughly practical one—of determining the amount of heat necessary to inhibit the further growth of a mass of cancer, is to grasp the mass in the hand, encased in a medium weight rubber glove. On an average, when the hand of the surgeon is encased in this weight of rubber glove, he can tolerate a temperature of 115 to 120 degrees F. (46 degree C. to 49 degrees C.) As will readily be appreciated, such a temperature will not cause a burn of the first degree. It is an interesting fact that the brown color of the rubber glove, which holds the malignant mass until thoroughly hot, is frequently transferred in part to the fingers of the surgeon, the fingers of the glove becoming appreciably lighter in color. The surgeon who attempts this work for the first time, will be surprised at the slowness with which the heat penetrates the cancerous mass. A change of temperature is rarely appreciated, as a rule, until after the heating iron has been in the mass for from ten to twenty minutes, when the growth is small; and for a much longer time, when the tissues involved are even moderately extensive. When the cervical and vaginal involvement are pronounced, and has spread to the pelvis, fixing the uterus and parametrium, and probably involving the bladder and rectum, one rarely can get the tissues hot without a continuous application of the heating iron for at least from forty to sixty minutes. This slowness of penetration of heat, from what I have already been pleased to call my "cold iron," usually leads the inexperienced operator to turn on more heat. When this becomes sufficient in degree to burn the tissues, a carbon core is rapidly formed, as already detailed, and immediately the further dissemination of heat is inhibited.

This, again, is usually met by more heat which rapidly becomes dangerous to structures contiguous to, but outside of, the cancer area. When a charcoal core is found to have been formed in this way, it is necessary to remove it with the

sharp curette. When this is done, turn down the current coming through the rheostat to a degree sufficient only to heat the tissues thoroughly enough to kill carcinoma cells, not cauterize them. When all the pelvic structures are fixed by the cancer involvement, the heat should be applied until everything is freely movable, as they are normally. This is an exceedingly important point.

The curette should never be used before the heating iron, even to get a portion of the complicated structures for diagnostic purposes. When the tissues are thoroughly permeated by the heat, the cells are fixed in such a way as to become immediately available for sectioning and staining without the further use of the usual hardening methods. At the same time the heat seals at once the lymphatics and blood vessels, preventing the further dissemination of the cancer and mixed infection. In addition, the immediate nerve supply is cut off. This is the probable explanation of the freedom from shock and local pain which is the rule following this operation. It is no part of my technic to remove any of the pelvic structures, the seat of the carcinoma. The only exception to this statement is that I do remove both ovaries; first, to limit the blood supply, and second, to bring on menopause where it has not yet occurred. If this is not done, a torturing form of menstruation may occur for a few periods, from the cervical stenosis which occasionally follows the application of the heat.

The most distressing class of cases that one meets are those in which a recurrence of the malignancy follows a panhysterectomy. In these cases there is no exuberant mass to be used, as one would kindling, in order to develop heat. When recurrence develops after a total hysterectomy, it is usually of the infiltrating type (adenocarcinoma) and the invaded tissues left after the hysterectomy are not of sufficient thickness to permit of the development of a degree of heat necessary to kill the carcinoma cells. If a cauterizing temperature is used it cannot be regulated, and the result is a distressingly destructive effect which will probably destroy the most important part of the urethra, or make a hole in the bladder. This caution becomes additionally important if the recurrence is in any part of the pelvis, especially in either one or both of the broad ligaments. In other words, there is not enough mass in the recurrent malignancy in which the heat can be disseminated, and the effect is at once that of the cautery, which, I repeat, is always destructive in its effect. In order to overcome this lack of mass have tried filling the vagina full of a tightly bound beef mass, in which, with an apple corer, I have made a hole for my heating iron. In this way I have succeeded very well in radiating heat through the vaginal wall to the degree that experience and the laboratory have shown to be destructive to the cancer cell.

The most common seat of recurrence following a panhysterectomy is in the stumps of the broad ligaments and base of the bladder, and next, in the fascial walls of the pelvis. The most direct method of attacking and destroying these is through a vertical incision on the side of the vulva, outside of the lateral vaginal walls. I place a long, narrow, water-cooled speculum down to the malignant mass through this vertical incision and apply the heat until it has become too hot for the fingers which grasp the tissues from the pelvic side. The water-cooled speculum protects the vaginal and lateral walls of the incision, and when it is withdrawn, a few stitches with a cigarette drain at the bottom of the wound, completes the treatment in this type of case. A word of caution is necessary in this otherwise simple procedure, viz., possible injury to some of the sacral nerves. A distressing form of foot drop on one side was a sequel in one of my cases.

It is utterly impossible to apply heat to the pelvic organs for the purpose of destroying cancer in the most effective way, without opening the abdomen. With the abdomen open, the surgeon is at once made acquainted with the problem before him. More than this, he knows what degree of heat he is using, and more important than all else, he sees or feels just where he needs to apply it. Opening the abdomen in order to more effectively apply the heat, and coagulation of the tissues involved in the malignant process—rather than carbonization—are two very important elements in the successful application of the technic here outlined. In order to do this most effectively, three things are necessary and they are extremely important:

*First.*—A low degree of heat.

*Second.*—The heating iron must not be moved about; in other words, it must be retained in one position until that part of the malignant mass has been thoroughly heated for at least ten minutes, when it can be moved into a new location, and the process repeated.

*Third.*—The heat must be applied until all the malignant, fixed pelvic structures are freely movable.

*Technic.*—The patient is prepared for a simultaneous or a combined abdominal and vaginal section.

The legs are elevated as for a perineal operation and the head of the table is lowered not only to empty the pelvis of intestines, as far as possible, but also to bring the vaginal field to a higher level. In this way the operator, applying the heat to the vaginal mass, can stand in a more comfortable position. It is important not only to have the buttocks project over the edge of the table, but also to be certain that they will remain there. In order to secure this, shoulder braces are necessary. Inside of these

a well-padded sandbag of six or eight inches diameter is an advantage; against this the shoulders will rest and also support the head.



FIG. I.

It is important to shield the clean abdominal field from the septic vaginal discharges. This has been provided for in a most practical way by Miss Elfrieda Erlandson, chief surgical nurse of the Galesburg Hospital. This consists of the ordinary laparotomy sheet, folded three times transversely at the junction of the lower with the middle third of the sheet. This folded part extends between the knees of the patient and is fastened by tapes. The lower corners of the sheet are folded so as to form a hood over the feet, while the loose lower end of the middle part of the sheet is fastened by a band of adhesive plaster, (two inch) between the thighs across the upper part of the pubes.



FIG. II.

The next step is the opening of the abdomen by a very free incision, and the examination of the entire abdominal cavity for evidences of metastases. I might say in passing, that in the larger proportion of cases, (80%) no evidence of extension of the disease outside of the pelvis will be found. The abdomen is packed off from

the pelvis by a single gauze pack, ten or fifteen yards in length. The placing of this pack is done as far as possible without traumatism of the parietal or visceral peritoneum. When this unnecessary traumatism is avoided with the exclusion of the air from the abdomen due to the pack, both post-operative pain and adhesions, to say nothing of shock, are reduced to a minimum. The ovaries and tubes are now removed and both internal iliac arteries are tied. If this is difficult to do, then the uterine arteries should be ligated as near the pelvic wall as possible, providing it can be done without disturbing the mass of cancer. When I used the high degrees of heat, i. e., burned up the gross mass, late hemorrhages were practically unknown. With the low degrees of heat which exert only a coagulating effect on the tissues involved, hemorrhages have become more frequent. It is an advantage, therefore, to tie off all the blood supply to the pelvis possible, in order to aid in the starvation of the tissues which might otherwise become involved in the malignant process. These hemorrhages come on late, as a rule about two weeks following the application of the heat, and so far they have occurred in two and a half percent of the cases treated. Four of my patients so far have died from hemorrhage. It was these deaths that necessitated my tying the internal iliacs as an important part of the treatment. Since this procedure was adopted, I have had no hemorrhages.

The combined abdominal and vaginal operation permits of good team work. While the abdomen is being opened and explored and the extent of the pelvic involvement determined, the vagina can be dilated. This can be done by an assistant using the vaginal dilator. It is usually necessary to maintain this instrument in place until the mucous membrane, on the vulvar margin is ready to crack. In this way the vagina is made to fit the speculum rather than the speculum to fit the vagina. If the first stretching of the vagina with the dilator proves to be insufficient to permit the introduction of the desired size of the water-cooled speculum, removal for a few minutes and reintroduction of the dilator will allow of a much larger increase in the size of the vagina. Before introducing the water-cooled speculum. It is advisable to apply Tr. iodine or Harrington's solution to the entire vaginal surface. This is perhaps a protection should the vaginal or uterine walls be opened, during the treatment in the pelvis. I say "perhaps," because in former years, where this accident occurred, and no application of the iodine or other preparation made, no apparent harm was done. With the water-cooled speculum in place and retained there by an assistant or a trained nurse, the heating iron can be applied to the malignant mass. If the operator's hand in the pelvis finds no evidence of cancer except in the usual location, viz., the utero-cervical junction, I still

think it wise to pass the heating head to the fundus of the uterus. (See Fig. III.) In this way one is in the best position not to ignore a possible involvement of the body of the uterus. If the proximal end of the cervix has not been softened by the malignancy, it will be found difficult to reach the fundus unless the cautery knife is employed. The best way of doing this is to use a cautery heat sufficient to cut through the cervical canal laterally and vertically, thus, +. This will, of necessity, develop a carbon core, and before the cartridge-shaped heating head can be made to reach the fundus, a sharp curette for the removal of this core must be used. The operator's hand in the pelvis, grasping the uterus (Fig. III), and the other tissues involved, can direct the assistant working from the vaginal side of the pelvis as to the degree of heat coming into the body and fundus of the uterus. More than this, he can guide the assistant, working from below, as to where he should direct the electric heating head. He can also aid the assistant, who may not be able to direct the heating iron into the involved masses, by pushing the malignancy down or into the head of the heating iron.

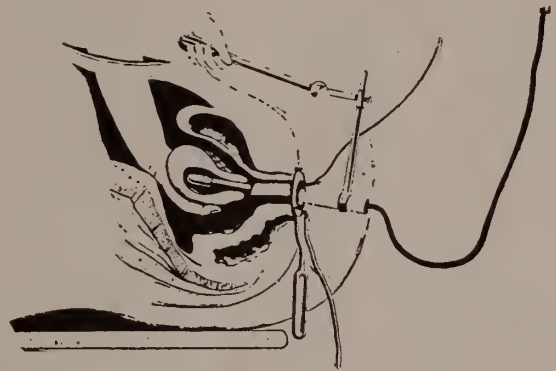


FIG. III.

A most important part of the technic should be emphasized again here. Do not remove the heating head from any of the involved structures when once placed, until the part is so hot that it cannot be held longer in the gloved hand. This applies not only to the gross mass in the cervix, uterus or pelvis, but also to the bladder and rectum when involved. To remove the heating head before the parts are thoroughly hot, simply defeats the fundamental idea of the technic which is, I repeat, a low degree of heat, continuously applied, until the carcinoma cells are killed. Where this technic fails of results, it will be found that too rapid application of the heat with the consequent failure to obtain penetration, will be the explanation. I might add, in passing, that this operation is not for the novice in surgery.

So far, I have described the technic for the

average case of pelvic involvement. A word as to the best procedure in the event of the cervix and vaginal walls being extensively involved. The shank of the heating iron, when the cartridge shaped head is in the body of the uterus, usually takes care of the exuberant overgrowth in and surrounding the cervix. The most difficult thing is to apply a destructive amount of heat to carcinoma cells that have already invaded the vaginal walls in the form of little pearl-like masses. I know of no more practical method than the use of the water-cooled speculum open at the top, and the angular thermometer placed in the urethra. With this speculum and the thermometer, and the heating iron lying on the bottom of the speculum and raising the temperature in the urethra to 120 degrees F. (49 degrees C.) a degree of heat is obtained sufficient to kill carcinoma, if maintained for ten minutes. This degree of temperature will not destroy the sphincters or injure the caliber of the urethra. When a degree of heat sufficient to kill carcinoma is assured, as shown by the thermometer in the urethra, it can be removed and the speculum rotated slowly in the vagina until all the involved mucous membrane is treated by the heat. The degree of heat just referred to affects the surface of the mucous membrane, giving it a sickly yellow color which, when once recognized, also gives the operator a very practical method of deciding whether or not the tissues have been heated to a degree sufficient to kill carcinoma and not destroy the vaginal walls. Where the base of the bladder is involved, the angular thermometer or a straight one can be passed into the urethra and down on the floor of the bladder. This is made practicable by the use of the water-cooled speculum with a depressed groove. Here again when the thermometer registers 120 degrees F. (49 degrees C.), a degree of heat coming into the bladder sufficient to destroy carcinoma is assured. Regulated in this way, a fistula is a rare sequel.

Where the carcinoma has fixed the rectal mucous membrane, two fingers of the rubber-gloved hand can be placed in the rectum and the heating head, directed through the water-cooled speculum in the vagina, can be made to heat the involved tissues sufficiently and at the same time not injure the rectum. I have applied this treatment in this way until all the fixed tissues palpable through the rectum were movable, and I have seen ulcers due to carcinoma in the rectum heal within a short time following the treatment.

Cold water irrigation of the bladder and rectum through a double current catheter can also be practiced when applying the heat. In this way either of these organs can be made to serve the purposes of a water-cooled speculum and the treatment can be applied to the involved parts just short of destroying the mucous membrane portion of the walls of either the bladder or rectum.

Every case of carcinoma of the uterus should have a preliminary cystoscopic examination of the bladder to determine the involvement that may or may not be present. A fistula into the bladder or rectum *through the uterus*, when produced by the treatment, usually heals spontaneously in six weeks. A fistula through the vaginal walls into either of these viscera is a more difficult proposition to deal with, mainly because of the scar tissue produced by the heat.

Attacking carcinoma of the pelvis from above through the abdominal water-cooled speculum, must be left for another paper. I might say, in passing, that the problem in these extensive cases is one of drainage, i.e., to get rid of the broken down cancer cells as quickly as possible, because of the danger to the patient from the absorption of an overwhelming dose of this dangerous-to-life product.

The vulsellum forceps and the wire retractors are very useful instruments where the vaginal mass exceeds the diameter of the water-cooled speculum. The edge of the carcinomatous cervix can be brought into contact with the heating iron by using these instruments through the water-cooled speculum to either lift or pull the mass within the reach of the heating head.

I have practically given up the use of the gas stove and the cartridge-shaped heating heads used with it. The reason is that the heat obtained in this way is intermittent and cannot be regulated with the supreme effectiveness that is absolutely true of the electric heating irons. In addition to this, continuous heat obtainable from the electric current not only shortens the time required for the treatment, but makes it much more accurate and effective.

The immediate after-treatment is usually that following a simple laparotomy. Towards the latter part of the first week a vaginal douche, usually 1-2000 Formaline, is given every other day because of the offensive discharge. This discharge practically ceases at the end of two weeks. No local after-treatments are required because the water-cooled instruments perfectly protect the vagina and vulva. These instruments add immeasurably to the comfort of the convalescence because the application of the heat can be absolutely limited to the involved tissues. In this way also sloughing of the vaginal walls, with all the suffering that this entails, followed as it invariably is by cicatricial contraction, is absolutely avoided. This leaves the vagina in a practically normal condition and available for a repetition of the treatment, should this prove to be necessary.

The final after-treatment of these patients should be that with the deep penetration method of the X-ray. I also have them report every six weeks for the first year. Again, before any treatment is undertaken, I insist that it may

have to be reapplied for a number of times, and that the abdomen is to be opened each time. This preliminary understanding, which almost amounts to an agreement, serves to minimize the wear and tear to the nervous system of both patient and surgeon, in the way of explanations, after each notification that another treatment is necessary. About fifty percent of my cases require a reapplication of the heat. In two cases it has been repeated five times. Unfortunately, practically all of my cases so far have been of the utterly hopeless type, as far as any other treatment is concerned. At this stage of the development of my technic, I have no right to talk of results. But I am convinced that a surprisingly large percentage of these cases can be transferred from the hopeless to the hopeful class by a technic which is not as formidable as a well executed Wertheim, and the immediate and in many cases the remote effects of which are truly beneficent.

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#### DIAGNOSIS OF COLON CANCER.\*

By JOSEPH BURKE, M.D., Sc.D.,

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THE alarming death toll in cases of acute obstruction due to cancer of the large bowel can be explained in three ways: the lack of appreciation by the patient of the symptoms experienced during the progress of the pathology leading up to obstruction, or to the carelessness of the examining physician or his inability to properly interpret the symptoms and physical signs presented, or as I believe in a great majority of these cases, to the fact that colon cancer is so slow in development, so imperceptible and insidious in its progress that symptoms of acute obstruction are the initial warning to the patient.

Most colon carcinomata that I have personally observed, presented signs and symptoms that pointed to their intestinal origin, a few presented symptoms that were characteristic of no definite pathology and had not enough physical signs to enable me to recognize the colon at once as the seat of the disease. Why is it that colon cancer can run along with so few distinguishing signs until the too well known picture of acute obstruction is the first manifestation? The answer can be summed up briefly and logically, for the symptoms and signs of colon cancer depend upon three definite pathologic factors: first, stenosis of the bowel; second, the accompanying intestinal catarrh, and third, ulceration of either the mucous membrane or of the tumor externally into some other organ, for instance into the bladder or perforate into the peritoneum. If stenosis is the single feature, without catarrh or ulceration, on account of the large caliber of the bowel and the slow development of the stenosis and the physiological hypertrophy above the seat of the constriction we can readily see how a patient can carry a carcinoma of the colon without giving marked clinical evidence of its presence, until acute stenosis occurs. In the cases where intestinal catarrh accompanies the disease, or where ulceration appears in the foreground, a typical symptomatology always obtains and classical physical signs are rarely wanting.

The clinical picture of a typical case of colon cancer can be best outlined as follows:

When an anæmic patient who has never had any infectious disease, and who enjoyed perfect health up to a certain given moment, particularly as regards his digestion, suddenly with or without dietary indiscretion, begins to suffer with colicky pains, with rumbling noises in his abdomen and radiation of pains toward the anus, accompanied by rectal tenesmus, and either in addition to obstinate constipation or diarrhœa notices a great loss of weight and increasing

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muscular weakness, cancer of some part of the bowel should be immediately suspected; when the stools contain blood, mucus or pus, or all three at one time the further suspicion of cancer is strengthened; and if a mass is also found in any part of the abdomen with or without visible peristalsis or intestinal rigidity, the positive diagnosis of cancer is assumed. The finding of a tumor is the "sine quæ non" in the positive diagnosis and this must always be established before a diagnosis can be made.

The pains of intestinal cancer we find localized around the umbilicus or spread diffusely in the lower abdomen. In some cases the situation of the colic, the pains being locally limited, corresponds to the seat of the disease, and if diagnosed as if intestinal origin will lead one to think of the local cause which, other things being equal, frequently turns out to be a cancer. These pains frequently radiate into the back, but continued pains in the back do not occur as frequent findings. These pains while occurring frequently at the height of obstipation, sometimes occur when there is fairly regular bowel movement, therefore, they do not depend upon intestinal rigidity but may sometimes be due to local peritonitis. On the other hand they can be absent with the severest obstipation, not occur at all, or set in late in the disease. The absence of colics, therefore, can never be construed against the diagnosis of a possible carcinoma of the large intestine. If every cancer of the colon in its incipiency produced pain as the initial and unvarying symptom there would be fewer deaths from obstruction, for obvious reasons.

Profuse hemorrhage from the bowel is of seldom occurrence in colon carcinoma; small flecks of blood are very frequent. When the bleeding is copious it generally originates in ulcerating cancer of the sigmoid or rectum. I saw a case in which the first symptom which caused the patient to consult a doctor was an alarming hemorrhage the origin of which could not be located. Two years afterward this patient was suddenly taken with acute abdominal pain, due to perforation of the sigmoid into the peritoneal cavity resulting from ulcerating cancer.

Tarry stools never occur in carcinoma of the colon.

The copious evacuations which occur in the late stages of cancer of the bowel, are scarcely ever influenced by therapeutic measures directed against chronic intestinal catarrh, such as diet, opium, etc., and this fact may serve as a diagnostic reminder.

In carcinomata which affect the descending colon and sigmoid flexure, there are symptoms somewhat peculiar to them, namely, tenesmus of the rectum, either alone or combined with bladder tenesmus and when we have these symptoms present in an otherwise obscure case we

must think of cancer of the large bowel as a possible cause.

*Differential Diagnosis.*—The differential diagnosis of colon cancer can best be considered by a study of the flexures, which are the points of predilection because these portions of the intestinal tract through which the contents move but slowly and sluggishly are particularly disposed to the development of malignant tumors. Beginning at the cæcum we find two pathological conditions which clinically can simulate carcinoma, appendicitis in old people, and ileocæcal tuberculosis. There are cases in which the differential diagnosis between cæcum carcinoma and appendicitis in old people gives rise to great speculation, when there exist elevation of temperature, and sometimes repeated chills, as well as acute local pain. But here, as well as in all cases, the taking of a very careful previous history and detailed symptomatology of the present illness, ought to be of great diagnostic aid. Some observers have claimed that temperature in itself speaks against carcinoma, but in this they absolutely err, because temperature elevation is a frequent phenomenon in gastrointestinal cancer, which my own cases have conclusively demonstrated. Hence I would suggest that in the differentiation between bowel carcinoma and appendicitis in elderly people, that we pay little attention to the temperature as against carcinoma, but rather depend more upon the previous history of the patient.

I have recently seen three cases of carcinoma of the cæcum with temperature elevation as a prominent symptom, in which the sudden onset of abdominal pain and the presence of a tumor made the diagnosis difficult. I observed however, that in palpating the mass in every case I found the skin and underlying structures of the abdominal wall easily movable as if separated from and gliding over the tumor, a circumstance which I have never observed in acute appendicitis or abscess. This sign I have since looked for in a number of appendiceal abscesses and in every instance found it absent, on the contrary I found marked rigidity of the abdominal wall. Very recently this sign was the determining factor in the diagnosis of cancer of the cæcum in a youth of 22 years.

In differentiating cancer from tuberculosis of the cæcum, however, most careful examination of both lung apices for healed tubercular processes, the presence of Diazo reaction, the finding of tubercle bacilli in the stool, and the positive Von Pirquet reaction, should guide the surgeon in the right direction. The tumor of cancer is more sharply defined, in tuberculosis the infiltration gradually disappears. In cancer the intestine itself is not palpated, but the mass as such is palpated; in tuberculosis the intestine is palpated, its walls thickened and infiltrated. There are cases of ileocæcal tuberculosis that even



after removal cannot be differentiated from cancer except by careful microscopical inspection.

Some cases of recurrent appendicitis with hard, indurated mass, without temperature elevation, with little increase in pulse rate which not infrequently occurs, is another source of worry to the diagnostician and more so to the operator. How to differentiate these cases before operation is a great problem, even when we open the abdomen we are at a loss to determine the pathology, as was illustrated in a recent case of a man of 45 years of age, who had no temperature elevation, pulse less than 90, visible intestinal peristalsis with a hard, irregular sharply defined tender mass in the right iliac region and symptoms of obstinate constipation approaching complete obstruction. Upon opening the abdomen I found the cæcum and ascending colon hard and indurated. The appendix adherent to the cæcum and running laterally and posteriorly was removed. The mass was so hard that the question of resection was raised but the patient's condition became so bad on the table that it was decided not to do it. The patient made an uninterrupted recovery. The mass which was undoubtedly inflammatory disappeared and the patient to-day is in perfect health.

The chief cause of error in differential diagnosis of the hepatic flexure carcinoma are gall-bladder and liver neoplasms and kidney tumors, and occasionally duodenal induration. The most satisfactory way I can discuss the differential diagnosis of hepatic carcinoma is the brief narrative of a typical case in which there occurred sudden disturbances of bowel function, after previous perfect health, diarrhoea alternating with constipation, loss of 28 pounds in six months, increasing muscular weakness, colicky pains in the abdomen, secondary anæmia and a tumor in the right hypochondrium. The diagnosis of malignant tumor was immediately suspected. The tumor was hard, tender and irregular, not round and smooth in outline, was passively movable and could be held fixed during expiration; this at once excluded gall-bladder in the diagnosis. The fact that the mass could be pushed up under the ribs and made to disappear argued against kidney origin; ballottement characterizes a kidney tumor, so does a mass which moves downward with inspiration, and both of these signs were present in this case. Coupled with this the observation that there was no blood nor mucus nor pus in the stools, no peritoneal friction sounds head over the tumor, no peristalsis visible caused us to hesitate a little in a positive declaration that we had to do with hepatic flexure carcinoma. The X-ray cleared up all doubt about the matter as I will show later.

Carcinoma of the transverse colon is so exceedingly rare that confusion with carcinoma of the greater curvature is of seldom occurrence. The prominence of the gastric symptoms, such as coffee grounds vomit, the presence of Boas-

Oppler bacilli and the presence of lactic acid in the stomach contents, and the absence of free HCL need only be mentioned to differentiate carcinoma of the transverse colon from stomach cancer; then too, the x-ray is a valuable aid as I have frequently seen.

There are cases of carcinoma of the transverse colon that rupture into the stomach and give rise to fæcal vomiting; the diagnosis of such a condition presents a problem for the surgeon as to operative interference. Carcinoma of the splenic flexure can be mistaken for carcinoma of the stomach and of the spleen, and tumor of the left kidney. A recent case was mistaken for kidney tumor on account of pain in the back and the presence of a mass in the left hypochondrium, but auscultation over the mass elicited characteristic peritoneal friction sounds, indicating the intraperitoneal origin of the tumor. The X-ray demonstrated, beyond a doubt, carcinoma of the splenic flexure.

In malignant diseases of the sigmoid where the early pains are referred to the bladder and the left testicle, the error of confounding it with nephrolithiasis can obviously be made; but the absence of pathological urinary changes, blood, pus, etc., the negative X-ray findings as regards stone in the kidney or ureter, would exclude kidney colic at once.

When we consider the differential diagnosis between carcinoma of the sigmoid and diverticulitis we are up against a very difficult problem, in many cases one resembles the other microscopically so much, that even at operation the surgeon cannot always positively determine the pathological condition present and the microscope alone decides it. We will consider nevertheless, several clinical features that may lead us out of the wilderness of uncertainty. In sigmoid diverticulitis that is active, there occurs always a palpable mass; not so in cancer. Muscular rigidity speaks for diverticulitis and against carcinoma unless peritonitis complicates the carcinoma; in cancer cases there occurs mostly constriction not palpable. A mass therefore, that appears suddenly in a patient who has complained a long time of pain and tenderness, especially occurring in attacks, speaks for an inflammatory character of the process and against carcinoma; if the mass disappears and after a time returns an inflammatory process is almost positive. In cancer there is secondary anæmia and a great loss of weight and strength; in most cases of diverticulitis, the patients have been well nourished, of good color and sound musculature, and the weight loss very slight, frequently these patients are obese. While increase in temperature and leucocytosis cannot be argued positively against cancer yet they would favor a diagnosis of inflammation. Microscopic blood in the stool argues for carcinoma and against diverticulitis; 75% of sigmoid carcinomata have blood in the stools.

In conclusion I will say that

1.—Early diagnosis in colon cancer is the surest means to a surgical cure.

2.—In cases of unexplained loss of weight and diminished muscular strength, with secondary anæmia in any adult above forty years, particularly if gastro-intestinal symptoms are present, cancer of the colon should be carefully considered.

3.—Where a tumor is present in any of the four corners of the abdomen colon cancer must be thought of.

4.—When peritoneal friction sounds are heard over the tumor it speaks positively for its intraperitoneal origin.

5.—In sudden profuse hæmorrhage from the bowel the colon should be diligently investigated for cancer, particularly the sigmoid flexure.

6.—When an adult complains of colicky pains in the abdomen, particularly when accompanied by disturbances of bowel function, colon cancer should be thought of as the probable cause.

7.—In cases of suspected acute appendicitis in elderly people, cancer of the cæcum must not be lost sight of in our diagnostic deliberations.

8.—In all cases where there is the slightest suspicion of colonic derangement the X-ray should never be omitted in the examination.

9.—In all cases of suspected cancer of the bowel, X-ray examination should always be made. I believe that the X-ray is the greatest aid modern science gives us in the differential diagnosis of colon cancer.

Since the above was written I have operated a case in which the absence of a palpable tumor and the negative X-ray findings led me to exclude carcinoma in the final analysis. The case briefly was that of a fireman 47 years of age who had in earlier years suffered from repeated attacks of abdominal distress and various diagnoses were rendered by different physicians. His present illness began about six weeks ago, after a period of loss of weight and strength (40 pounds in six months) with the symptom-complex of acute intestinal obstruction, even to faecal vomiting. While considering the advisability of surgical interference the acute obstruction passed. Thereafter, up to the time of operation the patient had frequent attacks of painful diarrhoea alternating with obstinate constipation. Blood in quantities and mucus appeared frequently in the stools. At times the cæcum and ascending colon could be seen to stand out prominently with tumor-like rigidity; intestinal peristalsis became visible. Here were all the characteristic signs and symptoms of hepatic flexure carcinoma. But there was no palpable tumor—which I consider a most important point in the diagnosis—and the X-ray showed against carcinoma, two most important factors which made me decide against malignancy as the cause of the bowel obstruction. At operation there was no cancer! The obstruction was due to a band

causing a kink in the middle of the transverse colon, connecting the latter almost with the cæcum. Hence I reiterate that, first we should not make a positive diagnosis of colon cancer unless there is a persistent tumor palpable; second, that in suspected cases of carcinoma the X-ray should never be omitted in our examination.

The blood in the stools in this case can be explained by the erosions of the bowel at the point of obstruction due to the scybalous masses.

#### *Discussion on Papers by Drs. Burke and Draper.\**

DR. MARTIN B. TINKER, Ithaca: I think an observer from outside of the medical profession would get the impression that surgeons and internists are at odds as to the question of the treatment of intestinal stasis. I do not believe that there is as wide a difference of opinion among honest workers in medicine and surgery as would appear on the surface. In the first place, I hope no one will take away from this meeting the misconception of surgeons in general, the more conservative, the more progressive men, are anxious to operate upon a large number of these cases.

During the past year I spent five weeks in observing the work in various progressive clinics, representing the better surgery in this country. I have seen one colectomy and no ileostomy. The colectomy was done by a man that most of us would not feel inclined to follow.

As regards the attitude of the surgeons in this country as to the question of the very wide use of colectomy or of ileo-sigmoidostomy, I believe that the average surgeon is perfectly willing for his medical colleagues to cure these cases as long as there is possible hope of relief. I think most of us are convinced of the fact that a good many of these patients can be helped, if not cured, and that their lives can be made livable and efficient in many instances. I think some of us are also convinced that Dr. Goldthwait has given us some valuable ideas. I have had occasion to observe some of the patients who have been treated by Dr. Goldthwait, or according to his ideas, and I must say that some of them undoubtedly have been decidedly benefitted. There remains, however, a number of these cases who are not relieved and medical advisers feel that if there is hope in surgery they should be given the chance. Shall we turn these cases down? Shall we refuse to try to do anything for them? If we try to do something for them, what shall we do? As I have already indicated, I believe the trend is decidedly against a complete colectomy among the progressive surgeons of this country. I believe ileosigmoidostomy has been pretty generally discarded by the progressive surgeons of this country. On

\* For Dr. Draper's paper see June issue, NEW YORK STATE JOURNAL OF MEDICINE, page 226.

the other hand, there are a number of men who have taken up the less radical operations very similar in character to what has been described this morning by Dr. Draper. Several of you must have noticed in the Journal of the American Medical Association a short time ago a paper by Dr. William J. Mayo in which he advocated a very similar procedure and reported some satisfactory results.

I think Dr. Draper deserves a great deal of credit for showing us why, in all probability, this operation does give satisfactory results, and I believe this less radical procedure has a limited field of usefulness; that most of us have seen cases that we feel were not likely to be benefited permanently by it.

There is a further point with regard to the severe infectious cases that Dr. Draper brought up. Almost every one of large experience has seen some of these serious cases and we all know how hopeless hemorrhagic colitis cases have been considered. We all know that in a large proportion of cases multiple polyposis is followed by degeneration into cancer and death. I remember assisting Dr. W. W. Keen some years ago in doing a Kraske operation, resecting a large segment of the lower bowel to get rid of this condition—a very radical measure. Now, as I understand it, Dr. Lynch and Dr. Draper are proposing ileostomy as an alternative in these cases. As far as my observation goes, in many of these obstinate cases of colon infection medical measures have been futile—measures used by good men, like Tuttle, the proctologist, of New York. I have had occasion to observe some of the cases he has treated and in which treatment proved futile.

Very little has been suggested in a surgical way. Ileostomy would seem to be a simple thing to do, and I feel sure that some of us will be inclined to try it in these desperate cases. We must, at least, hit upon something that will save the lives of the cases that have been hopeless heretofore, and that will warrant taking more radical procedures, and there may be a considerable measure of good in the less radical operation which has been proposed today.

DR. JEROME M. LYNCH, New York City: I want to congratulate Dr. Burke on his excellent paper, and say a few words on the early diagnosis of cancer. This subject is one that is particularly interesting to me, as I have had an unusual opportunity with the late Dr. Tuttle to operate upon and help him with 180 cases of resections before he died, and subsequently I have operated on 150 cases myself, and I have seen 400 or 500 cases. I must say, that the early diagnosis of cancer is an extremely difficult problem in the hands of the best men.

Dr. Burke spoke of anemia, loss of blood, constipation, diarrhoea, blood in the stools, and a number of other conditions that give these same symptoms. Let us take, for instance, hemorrhagic colitis, simple intussusception of the

bowel, or take anemic dysentery, unless you are careful a mistake may be made and one must eliminate these conditions gradually.

The X-ray unfortunately, except in the late cases, is not valuable. In the early diagnosis of cancer the X-ray is not helpful. That has been my experience. It is in the late cases that the X-ray is of some help, but cancer remains stationary in the colon for a long time. A patient may have cancer with very few symptoms. In the majority of cases I have seen there has been very little anemia except when the cancer is situated in the cecum; but in cancer in other parts of the colon, I think anemia, except in the late stages, is rare. The fact that the majority of patients lose in weight means nothing. We must get rid of the idea that a good many cases occur in people between twenty and thirty. That has been our experience. The only symptom of cancer may be the passage of blood. I remember one case particularly of a prominent man referred to me because he supposedly had hemorrhages, passing a little blood. It was the first time he had noticed that he had passed blood. He thought it was nothing of consequence, but as his brother had undergone an operation, he insisted on being examined. Examination disclosed that this man had an almost inoperable tumor of the bowel, and yet he had no symptoms to speak of. He passed mucus and gas and attributed that to indigestion, and the only symptom was the passage of blood.

As to palpation of the mass, in my experience it is difficult to palpate cancer in thin people except when the tumor is almost inoperable.

The point Dr. Burke made of smart hemorrhage I think is indicative of cancer. These patients have a very severe hemorrhage without any excuse, the hemorrhage subsiding for a time, and then six months later they develop the symptoms of cancer.

The diagnosis between diverticulitis and cancer is almost impossible in some cases, because in a case I recently had and showed the New York Pathological Society, the man had both diverticulitis and cancer. The cancer evidently was the result of the diverticulitis. He had both an acute and inflammatory condition, as well as a malignant condition at the same time. Indigestion to my mind is a very early symptom of cancer of the colon. We have observed that indigestion and constipation are perhaps two of the earliest symptoms of cancer; therefore, every patient who, up to a certain time, has been perfectly healthy, and develops a marked constipation should be investigated very carefully. We have seen a great many cases and have noticed particularly the difficulty of emptying the bowel in cancer cases, although they were given cathartics and enemas, yet when you make a resection of the bowel you will find an accumulation of hard fecal matter above the growth, although no encroachment of the lumen by the

growth. It does not make any difference whether the tumor has laterally extended, we have noticed severe constipation in these cases. In one case the man was referred to me by Dr. John A. Wyeth, I operated on him three years and two months ago. We had a perfect functional result in this case, and it was the only case where I got primary union after the operation. He left the hospital the eighth day after the operation was done. The result was excellent. However, this man returned to me recently because he had a marked constipation after having been regular for three years. We examined him and found a slight recurrence. I resected a part of the sphincter. If I should operate the same case again I should do an operation now practiced by Dr. Miles, of London, excising the growth and skin at a distance regardless of the functional result afterwards. There was recurrence about the size of the end of my thumb. There was no excuse for the constipation with the reappearance of this growth that I could see.

#### A SUGGESTION FOR PRESERVING SPHINCTER CONTROL IN OPERATING FOR CANCER OF THE RECTUM.\*

By EDGAR R. McGUIRE, M.D.,

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**P**ESSIMISM in cancer seems to be universal. In my more optimistic moments however, cancer seems to be less malignant. The first ray of hope came in the removal of the lymphatics, but even then reported cures were often questioned. The great step forward however, came in the removal of the chronic sources of irritation, thereby preventing development. This also meant the removal of very many early growths, with complete cures. Nowhere is this better exemplified than in the recent improvement in the Mayo statistics for cancer of the stomach, by the removal of the chronic ulcer, and the accidentally discovered early cancer.

The human race has in some instances acquired a partial immunity to infections; small-pox, yellow fever in the negro, and syphilis are examples. While all of these are still with us, they have not the fearful malignancy of former years. So it may be with cancer. How else explain, first, the occasional undoubted malignant case recovering without treatment; second, the rare, but positive cures from so many different treatment; third, the not so infrequent breast cancer with a large sloughing mass cured by surgery, where adequate removal seemed impossible? In going over my personal cases of cancer of the breast, I find the percentage of cures higher than I could possibly have hoped. I expect to report these later, because I am quite sure that the widespread pessimism regarding cancer must be dispelled, in order to further increase our good results.

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

Nowhere is pessimism greater than in cancer of the rectum. Once the diagnosis is made, many surgeons tell the patient to go home, and when obstruction occurs to return for an artificial anus. Four years ago this advice was given to a case by one of our very capable surgeons. I, later, removed the tumor, and the patient is alive and well today, with normal rectal control. Usually, however, the fault is in the other direction. The cases are referred to the surgeon when all hope of radical removal has long since passed. This attitude regarding cancer of the rectum is all the more astonishing, when we realize the ease with which the diagnosis ought to be made. With the exception of the superficial epitheliomata, and possibly breast tumors, there is no malignant growth that offers such early opportunities for diagnosis. If we could but dispel the dislike of the general practitioner to making rectal examinations, the problem would be almost solved. Nearly every case seen has been treated for months for bleeding piles—with salves—and there has been no rectal examination made. Often the simple introduction of the gloved finger into the rectum reveals the diagnosis. With a history of mucous discharge, followed later by blood, and a growth in a location easily palpable, the diagnosis should be made early in the disease.

What has surgery to offer in these cases, viewed both from the standpoint of radical cure, and from that of the comfort of the patient? In answering the first of these questions, one ought to judge from recent statistics, to be even fairly accurate, but when we consider that from three to five years is necessary to estimate a cure, it is impossible to obtain these. However, even accepting the older ones, we find a report by R. Vuichoud, of Lausanne, of 102 cases showing 10 per cent well after three years, with a primary mortality of 20 per cent. Even with these dismal figures, surely the 10 per cent were worth the effort, when palliative measures would have meant 100 per cent mortality.

Another interesting report showed thirty-five (35) radical extirpations, seventeen (17) of which were Kraske operations, with five deaths and two cures. There were five operated by the combined abdominal perineal route, with two deaths and two cures, while in the perineal route alone there were thirteen (13) cases with one death and five cures. These showed a primary mortality of approximately 25 per cent, with over 25 per cent well after three years. Another striking feature is the excellent results following the perineal operation, with only a primary mortality of 8 per cent, and 38.5 per cent well over three years. Doubtless the most favorable cases were operated by the perineal route.

From the second standpoint—that of the comfort of the patient—I am quite convinced that one reason for so much discouragement in this work, is because there has been so little attempt made to secure sphincter control. The

reason for this paper is to offer a means whereby this control may be obtained in a large majority of cases, instead of resorting to the usual artificial anus.

The present trend of carcinoma of the rectum is to widely remove the growth, without any attempt to secure sphincter control. In these cases there must be a dividing line between those located in the upper rectum, and those located in the middle—the lower one and one half inch rarely being involved. In the cases where the growth is located high, the abdominal route appears to be the safest method, but even here it is possible to save the sphincter in most instances. In those cases involving the middle rectum, little attempt has been made to preserve sphincter control. Dr. Charles Mayo, in a recent article, advises removal by the Kraske incision, and saving the lower inch which gives protection to the sphincter. Accurate suture here is, however, most difficult, because of the absence of peritoneum, and leakage is not uncommon. This complication finally led me to adopt the procedure herein described.

Under general anesthesia—preferably ether—the sphincter is injected with local anesthetic, in order to make complete dilatation easier. Then the mucous membrane is dissected free from the sphincter as in the ordinary Whitehead operation for hemorrhoids—excepting to a greater degree. It is most essential to have the sphincter dissected so that one can see it—to avoid injury. After removing the mucous membrane, and injecting the sphincter with local anesthesia, it is possible to dilate it to almost any degree, thereby making removal of the tumor comparatively easy. The tumor is now dissected free, by any of the accepted methods, the intestine exposed well beyond the involved area, and cut across as usual. One has now a normal sphincter, with an absence of rectum, from eight to ten inches. The mucous membrane is now grasped from below with the forceps, and carefully separated from the other coats of the bowel for about one inch. When this is accomplished, with a piece of gauze one can easily separate and bring down as much mucous membrane as is desired. The reason for this is plain when we remember the manner in which it lies in folds on the inside of the bowel. When sufficient mucous membrane is brought out to reach the anal ring without tension, it is sutured to the skin, as again in the operation of Whitehead, for hemorrhoids. If drainage is necessary it may be done through the anal opening, but outside the mucosa. No leakage from the rectum is possible, because one has a continuous mucous membrane.

On account of the thorough stretching of the sphincter, there will be some loss of control for about four weeks, after which time there will be a complete return to normal condition. For a few months there is a tendency to stricture, because of the formation of connective tissue around the wall of mucous membrane.

This can, however, be easily prevented by having the patient use daily a graduated rectal dilator, of which there are many on the market.

This procedure can be used to advantage whether the operation be done by the abdominal route, by the Kraske method, through the anal opening, or any other combination of methods. This is in no sense a new operation for this disease, but a very successful means of bridging over an extensive area due to the removal of the growth, and will be found exceedingly convenient when the divided ends are too far apart to suture accurately. I have probably used this method in less than a dozen cases, and only one of them has been operated sufficiently long to warrant reporting. The patient—Mr. R.—was seen by one of our capable surgeons, and his condition was declared to be inoperable. This, of course, was a mistake, but I mention it to show that it was not a very favorable case. The patient had lost 12 pounds in weight. He had been treated for hemorrhoids for about three months, without a rectal examination being made. Examination of the rectum showed an annular growth about two inches above the anus. My finger tip entered the opening through the anus, but I could not feel above it. Wassermann reaction was negative, and antitryptic positive. I did the described operation on February 5, 1911. The lower six to eight inches of bowel were removed, and the mucous membrane sutured to the skin around the sphincter. Recovery was uneventful. Perfect sphincter control was restored in about one month, and rectal dilators were used for about three months. Microscopic section, by Dr. Schriener and Dr. B. T. Simpson, of the Gratwick Laboratory, showed the specimen to be carcinoma. It is now four years since the operation, and when I saw the patient today he stated that he was in perfect health, and enjoyed perfect sphincter control, excepting when a vigorous cathartic was used, and even then it was not particularly annoying.

• Patient was shown to Society.

## OPERATION FOR CANCER OF THE BREAST—A LANTERN SLIDE DEMONSTRATION.\*

By PARKER SYMS, M.D., F.A.C.S.  
NEW YORK.

THE modern operation for cancer of the breast came to us in such a way as to mark a distinct epoch in surgery. I refer to the simultaneous and independent work of Willy Meyer and William Halsted, which was recorded and published by each in 1894.

Leading up to this, as in a process of evolution, were various steps, some of which deserve mention. First of all was the dispelling from our minds of certain erroneous ideas and misconceptions. Up to a comparatively recent

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

period cancer was thought to be a constitutional disease; it was thought to be due to certain unknown humors or juices within the body, or to depend upon some innate or hereditary tendency or taint. So long as we thought cancer to be a general or constitutional disease, we naturally could not conceive of such a thing as a radical operation for it. But when we came to recognize the fact that it is originally a localized disease, the possibility of a radical operation followed as a logical sequence. Today we believe that each cancer is a strictly localized process, in fact, it may yet be demonstrated that the lesion is at first limited to the nucleus of an individual epithelial cell.

In discussing incomplete operations for cancer of the breast in 1867, Charles Moore set forth ideas far in advance of his time, but unfortunately his statements were neglected and made but little impression on his contemporaries, and they failed to exert their due influence.

Probably no one contributed more to our modern conception of the subject than did Harold Stiles, of Edinburgh. He added much to our knowledge of the anatomy and histology of the breast and lymphatics, and particularly to their surgical and morbid anatomy.

Great credit is due to Handley for his painstaking studies of the modes and methods of the dissemination of cancer. He claims to have demonstrated the fact that a carcinoma develops eccentrically, spreading equally in all directions by a process which he has termed permeation. According to him there is a projection of the cancer in all directions from the center, by a process of continuous growth. That is to say, that by multiplication the cancer cells are reproduced and the cancer extends in every direction through the lymphatic canals and through lymph channels—some of which already existed and some of which are newly formed as a part of the entire process. In studying the lymphatic distribution in cancer, it has been found that there are definitely arranged lymphatic channels leading from the alveoli and acini of cancers, just as there are similiar channels leading from the normal structures of the glands. According to Handley, the growth is not always continuous throughout the lymph spaces, and this fact is owing to the establishment of a lymphangitis and a perilymphangitis, with the production of fibrous tissue, so that the channels and canals are actually converted into fibrous cords. Beyond these cords may be demonstrated actually developing cancer cells and cancer tissue, so that the growth appears not to have been continuous, though undoubtedly it really was. It is thus that Handley accounts for so-called metastases. (This would really be an illustration of the spontaneous cure of cancer, as far as these fibrous cords are concerned.)

While Handley's theory is doubtless correct as far as it goes, it is undoubtedly true that

cancer is also disseminated by being carried through the lymph channels and by being arrested and deposited in the canals and in the nodes, as cancerous emboli. And it is also doubtless true that cancer may be disseminated occasionally by being carried in the blood stream and deposited in remote parts of the body. This must occur but rarely, because the blood exerts a destructive action upon the cancer cells.

Handley's work has undoubtedly taught us much of a practical nature. It has impressed upon us the necessity of wide-spread undermining and removal of the subcutaneous and other fascial planes. I believe all of us now carry our incision as far as the umbilicus and remove the anterior sheath of the rectus and all the superimposed fat and fascia, which he has shown to be rich in lymphatics, tending to transport cancer from the breast to the abdomen. In giving credit to the laborers in this field who have contributed so much to our present knowledge, we must not fail to mention the masterful work of Heidenhain, Williams, Banks, Gross and a host of others.

But it was Willy Meyer and William Halsted who definitely placed the operation for cancer of the breast on its present footing. Realizing the fact that an early cancer is a localized process and that an early operation may therefore be a radical one, providing it is comprehensive enough to remove not only the original and visible growth but also its later offshoots, its invisible portions, they developed and described methods which have succeeded in accomplishing the desired result.

As far as the two methods differ one from the other, I have always felt that that of Willy Meyer was the superior. It is the one that has been followed by surgeons who have made various modifications and useful additions to its technique. I shall later speak of the modifications of the method made by Jabez Jackson and William Rodman. Rodman's modification of the Willy Meyer operation is one of the best that has yet been devised, and therefore I shall describe it in detail.

Willy Meyer's operation consists of an anatomical ablation of the entire breast and its adnexa (the lymphatics, lymph nodes and lymphatic bearing fascia) together with the pectoral muscles *en masse*. This is performed in such a way that the channels are not cut into nor cut through. By dividing the pectoral muscles early, one has immediate and ready access to the axilla and to the infraclavicular space. The veins and the lymphatics are divided at their trunks, thus there is a minimum of hemorrhage and the dissection is continued *from* the axillary and the subclavian regions, *towards* the cancer and not from it. In other words, the manipulation is all against the stream and not with it, and there is the least possible danger of expressing cancer elements into the wound and thereby disseminating the cancer.



FIG. 1.—Willy Meyer incision—Handley's extension to the umbilicus.

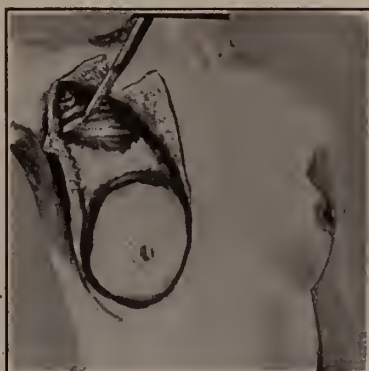


FIG. 2.—Willy Meyer—Division of the pectoralis major muscle.



FIG. 3.—Willy Meyer—Dissection en masse from axilla.



FIG. 4.—Rodman Incision.



FIG. 5.—Rodman—Division of pectoralis major muscle.



FIG. 6.—Rodman—Division of pectoralis minor muscle.



FIG. 7.—Rodman—Showing exposure.



FIG. 8.—Rodman—Showing completeness of operation.



FIG. 9.—Rodman—Showing suture.



FIG. 10.—Willy Meyer Method—One week after operation (Syms).



FIG. 11.—Willy Meyer Method—Five weeks after operation (Syms).



FIG. 12.—Rodman operation—double (Guthrie).



FIG. 13.—Jackson's Incision—Showing quadrilateral flap.

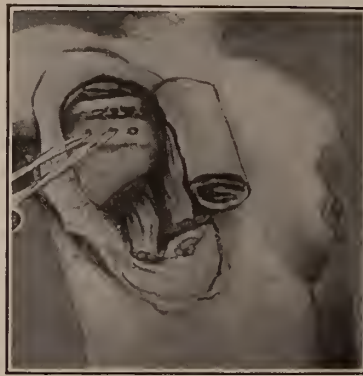


FIG. 14.—Jackson—After division of pectoral muscle.



FIG. 15.—Jackson—Showing ablation completed.



FIG. 16.—Jackson—Quadrilateral flap turned down.



FIG. 17.—Jackson—Suture commenced.



FIG. 18.—Jackson—Suture complete.

The pictures speak for themselves, so I may be very brief in describing them.

Figure 1 shows Willy Meyer's Original incision, and a branch running obliquely as far as the umbilicus. This last projection must be credited to Handley, and has only been used in recent years.

Figure 2 shows the skin flaps laid back and the outer end of the pectoralis major prepared for division.

Figure 3 shows the pectoral muscles divided and retracted, and shows the division of the venous and arterial trunks close to the main vessels. Remember that the undermining is extensively carried out in all directions, only a thin layer of subcutaneous fat being left attached to the skin. As the dissection is continued, it reveals how thorough the operation really is; (Guthrie's pictures show most clearly how complete it is) not only the breast and pectoral muscles and fascia are excised, but all the lymphatics and the fat are removed from the axillary vein down as far as the umbilicus, and laterally over as wide an area as from the median line to the border of the latissimus dorsi. Nothing is left but the ribs and the intercostal structures, and the clavicular portion of the pectoralis major muscle. I believe most of us now split the muscle and leave that portion intact.

I am indebted to Dr. Donald Guthrie for these excellent illustrations of the Rodman method. You will see by them, that the skin incision is very different from that of Willy Meyer, but that Rodman has followed Meyer as far as the other steps in the operation are concerned—working from the axilla, etc.

Through the oblique incision shown in Figure 4, Rodman begins his axillary work at once, first preparing and dividing the pectoralis major muscle and thus exposing the axillary vessels. One advantage claimed by Rodman for this method is the fact that during the first stage of the dissection one may inspect the axilla and determine whether or not the amount of lymphatic involvement warrants the completion of the radical operation.

Jabez Jackson, of Kansas City, has devised a very clever skin incision, as a modification of the Willy Meyer operation. His incision is made in such a way as to furnish a quadrilateral flap of skin, which is to be turned down to cover the defect occasioned by the removal of the breast. This is an ingenious form of plastic operation, but it has the objection of retaining that portion of the skin which overlies the upper and outer quadrant of the breast, the most usual site of cancer. In employing a plastic operation with the idea of completely closing the wound without tension, one may be tempted to remove



too little skin. Furthermore, the wide-spread undermining, as now practiced, renders final closure of the wound free from difficulty. I am convinced that the Willy Meyer or the Rodman incision will be found to meet all requirements.

Since his original publication, Meyer has abandoned the oblique incision toward the middle of the clavicle. I still employ it, for I feel that it saves time in making the necessary exposure. I am careful to carry the long arm of the main incision well forward of the axilla. A cicatrix reaching into the axilla may seriously restrict the motions of the arm. None of my patients has had any trouble on this account. Figure 10 and Figure 11 shows fair examples of the unrestricted arm movement. Of course, the manner of dressing has much to do with this, and is of great importance. As Jackson expresses it—the axilla should be obliterated. The dressing should be applied to the thorax only; the arm should not be included. In fact, the arm should be capable of perfectly free motion before the patient leaves the table and should not be kept close to the patient's side, but should rest comfortably on a pillow at quite an angle from the body.

One remarkable feature of this operation is the freedom from shock. If one operates properly, ligating the vessels near their trunks, there will be almost no hemorrhage. A dozen artery clamps will usually suffice, but if one operates improperly, dividing the many branches of the vessels, much blood will be lost. I have known of operators using as many as a hundred or a hundred and fifty artery clamps. Though this is one of the most extensive operations in surgery, the patients suffer so little shock that they are usually able to be up out of bed on the second, third or fourth day.

In closing I wish to emphasize one or two points:

One should never operate upon a tumor of the breast without having the patient's consent to do the radical operation should it be found to be indicated. In cancer of the breast, two-stage operations are not to be sanctioned.

For diagnosis one must depend upon his clinical sense and surgical judgment.

The frozen section should never be relied upon to determine a doubtful case.

When one is called upon to do a so-called palliative operation, one should strongly consider the propriety of performing this major operation instead. The risk is scarcely greater, and there is the possibility that a radical cure may result.

Prior to this modern era, the results of operations for cancer of the breast were most discouraging. Cures were rarely effected. The modern radical operation for cancer of the breast gives us new hope and greater encouragement; we are curing 25, 50, 80 and possibly 100

per cent of our cases, depending entirely upon the stage of the disease when the operation is performed.

## CANCER OF THE BLADDER.\*

By J. BENTLEY SQUIER, M.D.,

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**A** MOST important problem before the surgeon today is that of cancer of the bladder. Aside from the location and the poor lymphatic drainage, cancer of the bladder is no different in its origin and in its termination than is cancer in any other portion of the body, and the general surgical procedures of wide excision is as applicable in dealing with urinary malignancy, as is the excision of the pyloric zone for carcinoma.

Within the last few years there have been a number of procedures recommended either as curative or as palliative. These various forms of treatment may be classified under two groups: First, cauterization, and secondly, operative procedures. Under cauterization we have the igni-cauterization or the actual destructive action from burning, X-ray, radium irradiation and high frequency electric cauterization and finally Percy's "slow baking" cauterization.

Under the operative procedures are first, local excision and secondly, radical excision with an encircling margin or normal tissue with *en bloc* excision of the adjacent glands, a so-called subtotal cystectomy. For social reasons a variety of palliative procedures have been developed, the most useful being the permanent suprapubic fistula.

A broad survey of cauterization, fulgeration, X-ray and radium emanation will show that any benefits that may be obtained from their use is dependent upon the well-established biochemical principle that a cancer cell has less intrinsic vitality than a normal cell. For example, if we could take a cancer cell and a normal tissue cell and subject them to a variety of destructive influences for a given period of time we would find that the cancer cell had less vitality and succumbed to destructive influence sooner than the normal cell. It has been figured out that a normal cell is six times as resistant as a cancer cell. Now any of these treatments applied to cancer of the bladder meet their best indication in the superficial and papillomatous variety. It is not reasonable to suppose that a cancer cell can be reached at an unusual distance from the source of radiation nor will the cancer cell be destroyed when it is surrounded or has infiltrated beneath normal tissues. Therefore we may conclude that the range of therapeutic activity of X-ray, radium and fulgeration is distinctly limit-

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able to those tumors which are clearly upon the surface of the bladder without basal or diffuse infiltration.

In a very general way we might sum up our present knowledge concerning the therapeutic value of radium about as follows:

It is now not known what quantity of radium must be applied to kill a cell of a cancer within a given distance. It is perfectly certain that in the benign epitheliomata of the face including many types of basal cell epitheliomata, radium is capable of inducing a cure, since there are already a sufficient number of observations on human beings to enable us to make so positive a statement. We do know that radium will not cure a carcinoma or sarcoma at a distance of, say, three or four inches from the tube. This has been shown by the work of Krönig and Gauss and Bumm in Germany, who have published a series of cases of carcinoma of the uterus which have shown recurrences at a considerable distance from the site of the radium application, even though the primary carcinoma in the uterus had been completely destroyed. As far as one can now judge it is useless to expect any effect from the quantities of radium now available at a greater depth than about two inches from the tube. Within this distance it is often possible to influence tumor growth, but the quantity of radium required is so large that but few have the necessary amount. By large quantities is meant four or five hundred milligrams, which at the present market price is worth sixty to seventy thousand dollars.

It is well-known that many of the bladder papillomata are benign or at least not extremely malignant; if such growths can be approached either from the urethra or through a suprapubic incision and the radium placed in contact with the base in quantities of 200 mgm. and for exposures of from 24 to 48 hours, there is no question but that a good deal of effect may be secured within a radius of from two to three inches from the site of the application. The danger of deep ulceration with the production of recto-vesical fistulæ or fibrous must, however, always be kept in mind and guarded against.

In the malignant tumors of the prostate, involvement of the rectum or at least close approach to the rectal wall is not infrequently noted. In such cases the greatest care must be taken not to radiate too long and the tube should be buried in the body of the tumor so as to get the full effect of all the rays in all directions. Merely laying the tube in the bladder over the surface of the growth cannot be expected to do much good. The final results of the application of radium to bladder and prostatic tumors can not at present be estimated from the clinical side, for the reason that the number of cases thus far reported is small, and of these many have not been studied microscopically and, therefore, must be excluded, and most of the reports have

been made before a sufficient time has elapsed to make it possible to judge whether the cure is permanent. Certainly, with our knowledge of the slowness of growth of certain prostatic tumors, some of which do not recur extensively in less than one or two years, it is the height of folly to report a cure at the end of two months. We must rather wait patiently for at least three years before even considering that the results may be permanent.

It is wiser then not to consider radium as the primary therapeutic choice in the treatment of vesical tumors where operation is possible. If the operation has been necessarily incomplete it may be wise to radiumize the field thoroughly with large quantities of radium in order to destroy cancer cells which may have been distributed throughout the field of operation and those which remained beyond it.

Another important point to be borne in mind is that the biotic property of cancer cells vary with the type of cancer, with the individual and the anatomical location of the growth. In other words, in the present state of our knowledge we cannot determine what is the lethal dose of this agent. In some cases we may unfortunately induce a stimulating effect from its employment when this is not carried far enough to produce destruction. Percy has demonstrated that the ordinary carcinoma cell is killed under a slow heat at 45 degrees centigrade while a normal tissue cell is capable of withstanding a heat reaction up to 55 degrees centigrade. From this one may suppose that could heat be brought in contact with a cancer at a low degree of temperature for a prolonged period of time that it might bring about a total destruction of the cancer cells. In practice this does not obtain; it is the cell beyond the visible growth—the cell in the gland—in the contiguous tissues of the rectum, and perivesical spaces that we are unable to reach and which is the cause of the recurrence.

After a complete excision of a bladder tumor it is a rare incident for recurrence to appear in the bladder. The recurrences are in the perivesical tissue, in the rectal spaces and in the glands and abdominal viscera. Now we believe that a proper operative technic directed against cancer of the bladder will have to embrace a number of important and essential features. First, that there shall be a radical excision, with a wide encircling margin of health tissue and that the operative approach will be comparable in its technic with an excision of the pyloric zone for cancer of the pylorus. Secondly, that the anatomical and surgical exposure will at all times have three anatomical structures in view, the internal meatus and the terminal portion of the ureters. Thirdly, that any less radical technic will be futile such as peeling or "coning" of the tumor mass. Fourthly, it has been established that it is possible for a bladder to regenerate or

certainly to proliferate and form a functional urinary receptacle when from a half to two-thirds of the bladder has been excised.

In having the operative technic in the removal of cancer of the bladder comparable to the technic employed elsewhere in the treatment of malignancy we have been able to improve our statistics. We have operated cases with this radical technic where there was no reasonable expectation of a cure and where the operation was undertaken for social reasons and to provide a measure of relief. The cases that have presented themselves as suitable but of uncertain curability have almost all of them had a longer span of life than cases under a less radical cystectomy. The technic is not difficult and the anatomical exposure easy, if one is conversant with the surgical topography of the urinary bladder.

The technic also admits of a wide dissection of the adjacent glands which may or may not be involved. The belief has been handed down that the bladder is poorly supplied with lymphatics and this belief has been based upon the observation that the mucosa is without lymphatics or poorly supplied with them. This of course, explains those cases of cancer involving only the mucosa in which no recurrence has followed operation even when the operative excision has not been extensive, as well as those cases of brilliant results which are reported following the various methods of igni-cauterization.

However this may be, when a carcinoma involves the muscle of the bladder wall, a dissection of the pelvic lymphatics with their removal, is just as much a part of the operation as an axillary gland excision is part of a radical breast removal.

Wertheim's operation for cancer of the uterus admits of wide pelvic gland excision and a similar gland dissection is quite as possible if a proper exposure of the bladder and pelvis is made. The technic admitting of this has already been described by me and I shall briefly outline it by showing a few lantern slides at the close of this paper.

The points which are most necessary to be cleared up are, what are the factors which should decide for or against the various therapeutic measures which have been developed for treating vesical carcinoma. When should the igni-cauterization methods be employed and when should excision be advised?

The one word *location* almost sums up the answer. First, location as to the portion of the bladder involved, and second, location as to the depth of the bladder wall involvement.

In regard to the portion of the bladder involved influencing the decision as to proper choice of therapeutic methods, but one situation will render an adverse decision against radical extirpation—such is, when the tumor involves the vesical neck. Complete operative removal

is impossible when a tumor is here located unless the bladder is wholly removed.

We do not believe that the results so far obtained by complete removal of the bladder, irrespective of whether the ureters are brought out on the loin or are anastomosed into the gut, have warranted its employment.

In regard to the depth of the bladder wall involvement—if the mucosa is only invaded electric cauterization is ideal.

The difficulty obviously being our lack of ability to always definitely decide this question. It is here where a very extensive experience with cystoscopic observation of vesical tumors is a prime requisite of success. We have learned that submitting to a *pathologist*, small fragments of a tumor which has been bitten off by a cystoscopic rongeur is too often futile in solving the question of its malignancy. A negative report is of questionable value and a positive report may be so as well, unless the clinical picture of malignancy is present.

In my clinic we at present believe that the indications for the use of the high frequency electric cauterization to be the method of choice only under the following conditions:

First—In growths in immediate proximity to the vesical neck.

Second—With but few exceptions in multiple growths in any location.

Third—In small or moderate-sized growths that are pedunculated and unattended with clinical signs of malignancy.

Fourth—In post-operative recurrences as a palliative measure.

My hospital associate, Dr. J. F. McCarthy, who has made special study of high frequency destruction of tumors and who was among the first to employ the D'arsonvil or bipolar current in the treatment of them, has offered the following cautions. He says:

"Criticism of this method is, I think, appropriate when advanced along the following lines: That with a cystoscopist who may not be a trained surgeon and who attempts unconsciously but without sufficient justification to widen its scope, this method may prove a menace rather than an aid to the patient." In this direction may be added the danger of unduly prolonging these treatments in the absence of a reasonably prompt result. The possibility of complications such as alarming or even fatal hæmorrhage or peritonitis."

At this year's annual meeting of the American Urological Association a symposium was arranged, the subject being "Treatment of Vesical Neoplasms." Your fellow townsmen, Dr. James A. Gardner, presented a paper which included the results of various methods of treatment of vesical carcinoma from statistics supplied by many of the prominent surgeons of the United States from their personal work. He was able to compile accurate tables of over four hundred

cases, a careful analysis of which proved that surgery offered more than any of the other methods of treatment. Also, as we have learned better to expose the bladder and more widely expose the growth, so has the percentage of cures increased.

In reviewing any of the procedures directed against cancer of the bladder one cannot help but feel that there are certain special indications for all of them. We deprecate against using any of them *in early cancer of the bladder* except radical excision of the tumor. When a bladder picture suggests the possibility of malignancy we believe that that case is best treated along accepted surgical procedures, namely: complete operative extirpation. When a case is beyond the stage of reasonable operative expectancy we believe that life may be prolonged and suffering alleviated by the acceptance of some of the less radical procedures. We would reserve fulguration for unquestioned benign papillomata and as a procedure in inoperable carcinoma. We cannot be too insistent that betterment of the treatment of cancer of the bladder will depend upon the education of the profession to make a diagnosis sooner than hitherto, and secondly, to know that early cancer of the bladder can be removed, and that the operative treatment of cancer of the bladder under conditions of early diagnosis offers by all odds the best treatment and the most satisfactory prognosis.

## BASAL-CELLED EPITHELIOMA. A REPORT OF 200 CASES.\*

By ROBERT F. BARBER, M.D.,

BROOKLYN, N. Y.

**B**EFORE the time of Krompecher the tumors of the basal-celled type were not properly classified. A difference of opinion existed as to their nature. They were held by various writers to be carcinomata, sarcomata, or even endotheliomata. Krompecher, after his thorough study of 217 references, acknowledged his confusion, and from his own cases concluded that the tumors were entirely of basal-cell origin, and gave them their name, basal-celled carcinoma, or epithelioma, in 1903. Besides basal-celled tumors of the skin, he included under this title certain tumors of the mucous membranes, mammary glands, salivary glands, and ovaries. From its first employment by Krompecher, the term basal-celled has come to be used very generally to describe a type of tumor which occurs in the skin. The use of the term to describe tumors arising from mucous membranes, mammary glands, salivary glands and ovaries has not been generally accepted, and doubtlessly with good reason.

The material from which this paper was written was collected in the New York Skin and Cancer Hospital between the 7th of September, 1910, and 23rd of February, 1915. The specimens came from the operating room and also from the out-patient surgical service. The plates were made from sections cut in the routine examination and kept on file for future reference.

Krompecher in his monograph states that the various types of cells of stratified epithelium could not be recognized in these tumors. That morphologically and histogenetically the cells are basal cells and maintain their embryonal type. That they are not differentiated, and that they never show epithelial bridges or prickles. He also states that because of their undifferentiated character they do not show epithelial pearls, but that this feature occurs only in the malignant or prickle-cell type of epithelioma. Ribbert, having this same conception, calls these tumors horn-free skin carcinomata, or adenomatous skin carcinomata.

In order to change this conception of the nature of these tumors it is necessary to bring to hand contradictory evidence. The fact that 14 of the cases in this series of 200 showed well-defined epithelial pearls would tend to refute the idea that these cells did not differentiate themselves. A high and low-power reproduction of one of these cases is seen in Plate II, Figures 9 and 10. In two cases, 1521 and 2953, prickles or epithelial bridges were seen. This would indicate that this feature was not a unique characteristic of the malignant form of epithelioma. There must be an extension or change in the conception of these tumors to meet the facts.

The cells from which these tumors spring are the germinal cells of the skin. These cells may be said to possess a potential which shows itself normally in several ways. The cells have a vegetative potential by which they simply produce their own kind, and by later differentiation these cells become the upper layers of the epidermis. They also have a glandular potential, which manifests itself in the ingrowths of the sebaceous and sweat glands. They also have a potential which enables them to produce pigment. Besides the 14 cases showing pearls and 2 cases showing prickles, there were 6 cases which showed an adenomatous or glandular structure, and 28 cases that showed cysts. This simply demonstrates the secretory potential of these cells. Two cases showed marked pigment. It seems not improbable that these different aspects of the basal-celled tumors are but manifestations of the cellular potential. The reason that they do not grow as rapidly as the malignant type is that they have a low vegetative potential. Another way in which this low vegetative potential shows itself is in the size of the cells. This matter of size is one of the main points of difference morphologically between the two types. The basal-celled tumor has a small cuboidal, or if under connective tissue pressure, a spindle

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

cell, containing a large, deeply staining nucleus, and a slight cytoplasm. The malignant type shows much larger cells, with a more extensive cytoplasm.

The simplest type of these basal-celled tumors is formed by an ingrowth of masses or nests of cells into the connective tissue of the dermis. The amount of stroma is relatively slight when compared to the tumor cell masses. This type might well be called medullary. When the stroma is more abundant and the nests of cells are smaller, the term alveolar type might apply. When the stroma is still more abundant and the nests of cells have been reduced to narrow strands, a condition exists which could well be called scirrhous type, by analogy to breast carcinomata. The tumor cells sometimes show a tendency to produce a crude glandular structure. This type is very prone to show cysts. It is called the adenomatous type. Plate I, Figure 1 shows a medullary type; Plate I, Figure 2 an alveolar type; Plate I, Figures 3 and 4 scirrhous types; Plate I, Figures 5 and 6 and Plate II, Figure 7 adenomatous types.

Keeping in mind the varied potential of these tumor cells, it is not to be wondered at that they sometimes manifest an adenomatous tendency as seen in Plate I, Figures 5 and 6. The presence of cysts is probable due to the same tendency. Cystic conditions are well shown in Plate I, Figure 6 and Plate II, Figure 7. Cellular differentiation, which Krompecher denies, and Ribbert too, is well demonstrated in Plate II, Figures 8, 9 and 10. In Plate II, Figure 2, can be seen two pearls of cornified cells lying deep in the substance of the tumor, which is probably of the medullary type. Plate II, Figure 9 shows a scirrhous type of tumor with well-marked differentiation of the cells into numerous pearls. Plate II, Figure 10 shows a higher power reproduction of a selected field from Figure 9, which is very readily picked out.

The stroma or connective tissue of the skin is altered by these new growths. The autonomous proliferation of basal cells either furnishes a toxin or acts like an irritant. Nature's inflammatory response is seen in the small round cell infiltration which surrounds nests of basal cells. The increase in the connective tissue, especially in the alveolar and scirrhous type, is further evidence of chronic irritation. The connective tissue about the cell nests and under the epidermis in the immediate vicinity of the tumor showed often a basic degeneration. By this is meant that the connective tissue appears structureless, takes up the basic stain, hematoxylin, and does not stain with eosin.

The lesion which preceded the tumor was elicited in a few cases; 44 stated that the trouble started with a pimple. This may be due to the fact that to a layman pimple is synonymous with a small lump. Five started as a wart, one started from a burn, and one over the point of pressure of eye-glasses.

The cases occurred with the same frequency in each sex, 100 in men and 100 in women.

The average age of occurrence was 56 years. Some of the cases occurred very early. Two occurred in the third decade and ten occurred in the fourth decade.

In the 107 cases in which the duration was accurately recorded the average was six years. Three of the cases gave a history of duration of 38 years, 28 years, and 25 years, respectively. The shortest duration noted was six weeks. There were 19 with a duration under one year.

In 180 cases in which the size was measured the three largest were 8 cm., 7 cm. and 5 cm. in diameter. By far the most of the specimens were 3 cm. or less in size, and many were only 1 cm. in diameter. In two cases the tumor had extended into and involved the underlying bone.

The following table gives the pathological number, the extent, the type and the duration of ten of the largest of these tumors:

| <i>Path. No.</i> | <i>Size</i> | <i>Type</i>         | <i>Duration</i> |
|------------------|-------------|---------------------|-----------------|
| 1349             | 4 cm.       | Scirrhous           | 1 year          |
| 1680             | 5 cm.       | Adenomatous         | 12 years        |
| 1983             | 5 cm.       | Scirrhous           | 12 years        |
| 2201             | 5 cm.       | *Alveolar-scirrhous | 15 years        |
| 2338             | 5 cm.       | Alveolar-scirrhous  | 6 years         |
| 2478             | 4 cm.       | Alveolar-scirrhous  | 18 years        |
| 2519             | 5 cm.       | Scirrhous           | 14 years        |
| 2657             | 5 cm.       | *Adeno-alveolar     | 15 years        |
| 2768             | 4 cm.       | Scirrhous           | 16 years        |
| 2790             | 4 cm.       | Alveolar-scirrhous  | 2 years         |

From the duration of these larger tumors in the table it is evident that they are above the average duration, which was six years. A glance at the type of tumor will show the predominance of the scirrhous, which is doubtless due to the irritant acting over a longer period of time, and having ample time to stimulate stroma proliferation.

The following list shows the frequency of occurrence of these tumors in the various skin regions:

|                      |    |
|----------------------|----|
| Nasal                | 70 |
| Orbital              | 42 |
| Cheek                | 40 |
| Frontal and temporal | 19 |
| Ear                  | 14 |
| Lip                  | 4  |
| Scalp                | 2  |
| Neck                 | 1  |
| Sternal              | 1  |
| Scapular             | 1  |
| Back                 | 1  |
| Thigh                | 1  |
| Labia majora         | 2  |
| Abdominal wall       | 1  |

\* Indicates mixed types.

From this it can be seen at a glance that 96 per cent of these basal-celled epitheliomata occurred on the head: nasal, 35 per cent; orbital, 21 per cent; cheek, 20 per cent; frontal and temporal, 10 per cent; ear, 7 per cent; lip, 2 per cent, and scalp, 1 per cent.

A further investigation of these cases occurring in the orbital region showed that in seven the eye had to be removed because of the involvement. In one case, Path. No. 2478, the tumor had grown over the cornea. In six cases the duration of the lesion was definitely known, 10, 35, 15, 12, 5 and 18 years, respectively, giving an average duration of 16 years. It seems an interesting and striking fact that a tumor of sufficient malignancy to destroy the eye should take an average of 16 years to accomplish it.

Because of the greater frequency of the more malignant form of epithelioma occurring on the lip, especially the lower lip, the type of basal-cell tumor occurring in this region was investigated:

- Path. No. 2657.....Adeno-alveolar type
- Path. No. 2701.....Alveolar type
- Path. No. 2719.....Medullary cystic type
- Path. No. 2832.....Alveolar type

These tumors showed a low vegetative potential, were of long duration, and showed no metastases. Three occurred on the upper lip.

In the great majority of these tumors the surface is ulcerated. This develops secondarily. The stratified squamous epithelium overlying the tumor becomes thinner and eventually is lost entirely, thus exposing the tumor itself, which forms the floor of the ulcer. In these ulcerated cases a more acute type of inflammatory infiltration is noted in the tumor, with many polymorpho nuclear leucocytes.

The tumors may be elevated above the skin surface in the form of a nodule without ulceration, and two cases (Path. Nos. 2764, 2810) were pedunculated. These elevated and pedunculated tumors are very prone to show a cystic structure.

One case (Path. No. 2784) showed a sebaceous cyst. The wall of this cyst was infiltrated with a basal-celled tumor of the alveolar type. This case, too, could not be readily explained under Krompecher's hypothesis that these tumors arise from the undifferentiated basal cells of the skin and remain undifferentiated. This tumor doubtlessly arose from already differentiated basal cells; that is, from the sebaceous gland cells. If the view is taken that the cyst occurred secondarily in a basal-celled tumor, then the basal cells must have manifested differentiation in order to produce a sebaceous cyst.

Fifty-three cases gave a history of recurrence after treatment of one kind or another. Of these, 23 gave a definite history of "cure" with recurrence, the average period of freedom from disease being 2 years, 4 months, two cases re-

currence as late as 4 years. A case in which more than one treatment was used may appear twice in the following list of recurrences:

|                                 |    |
|---------------------------------|----|
| Following operation (excision?) | 16 |
| " X-ray                         | 19 |
| " Pastes                        | 17 |
| " Specific treatment            | 1  |
| " Radium                        | 2  |
| " Acid                          | 2  |
| " Cautery                       | 6  |
| " Salvarsan                     | 1  |
| " Currettement                  | 1  |

Of the 16 recurrences following operation one case had been operated upon 26 times, one 5 times, and another 4 times.

As these cases have come to the hospital from various sources their previous treatment has not always been according to the best medical skill. But taking the cases as we find them, there is one easy conclusion to draw. These tumors tend to recur and they show this tendency to a stronger degree than one would suppose from the figures appearing in recent surgical literature. It is especially interesting to note that 16 of the cases recurred after operation, which was probably done with average surgical skill.

A special study of the 23 cases giving a history of a "cure" followed by recurrence was made to determine if there existed any relationship between the type of the tumor and the tendency to recurrence. The following gives the approximate structure of the cases:

|                         |           |
|-------------------------|-----------|
| Medullary type          | 4, or 17% |
| Alveolar type           | 6, or 26% |
| Alveolar-scirrhous type | 9, or 40% |
| Scirrhous type          | 4, or 17% |

Concerning the medullary, alveolar and scirrhous types there are no hard and fast lines of demarkation. A pure type is not the rule. The predominating characteristic determines into which class the tumor should go. In the entire 200 cases the percentage of occurrence was:

|                         |     |
|-------------------------|-----|
| Medullary type          | 25% |
| Alveolar type           | 24% |
| Alveolar scirrhous type | 31% |
| Scirrhous type          | 20% |

This would seem to indicate that there is no relationship between the type of the tumor and the tendency to recur.

In six cases (Path. Nos. 1191, 1375, 1826, 1945, 2847 and 2953) two basal-celled tumors were found in the same patient. One case (Path. No. 2937) showed three distinct tumors, two on the nose and one on the eyelid. In three cases (Path. Nos. 1870, 2416 and 2653) the tumors were found in patients suffering from the more malignant type of carcinoma elsewhere in the body.

Krompecher quotes cases of basal-celled epithelioma that formed metastases. It is noteworthy that in his cases that did form metastases the tumors occurred on the breast. Tumors which resemble basal-celled tumors in structure, but which spring from glands and are characterized by cells of a high vegetative potential, might better be called carcinoma, and not included in this class of cases at all. Not a single case of these 200 cases here reported formed metastases. This agrees with Krompecher's findings on his tumors arising from the skin of the head.

#### SUMMARY.

I. Basal-celled tumors arise from the germinal cells of the epidermis and these cells do show differentiation at times as seen in the formation of pearls, adenomatous structure, cysts and pigment.

II. The difference between the malignant prickle-celled epithelioma and the more benign basal-celled epithelioma lies in the sharply contrasted vegetative potential, the malignant type having the greater vegetative potential, the basal-celled type the lesser. Both types arise from the germinal cells of stratified squamous epithelium.

III. The tumors may be classified according to the relative amount of stroma to basal cells, into: first, medullary; second, alveolar, and third, scirrhous type. A fourth, or adenomatous type shows a tendency to glandular arrangement.

IV. The average age of occurrence is 56 years, and the average duration before operation 6 years.

V. The tumors are uniformly small and grow very slowly.

VI. The tumors occur most often on the skin of the head exclusive of the scalp, and usually show surface ulceration.

VII. Over 10 per cent of the cases recurred after a definite history of a "cure" for a period of months or years. Operation done with average skill is not a guarantee against recurrence.

VIII. There is no relationship between the type of the basal-celled tumor and the tendency to recur.

IX. The tumors may be multiple, or associated with more malignant types of carcinoma.

X. Two hundred basal-celled tumors did not form metastases.

#### DESCRIPTION OF PLATES.

Figure 1. Pathological No. 2540.—A small tumor on the right side of the nose, of 2 years' duration, occurring in a woman 45 years of age. Over the greater extent the microscopic picture shows masses of basal cells with moderate amount of stroma, that is, a basal-celled epithelioma of the medullary type.

Figure 2. Pathological No. 2870.—A small tumor 1 cm. in diameter from the right tem-

poral region, of 16 years' duration, occurring in a woman 62 years of age. There is a uniform arrangement of basal cells in small nests, with a rather abundant stroma, that is, a basal-celled epithelioma of the alveolar type.

Figure 3. Pathological No. 2798.—A small tumor, 2 cm. in diameter, showing surface ulceration, removed from the skin of the neck from a woman. The microscopic picture shows narrow strands of basal cells growing in a dense fibrous stroma, that is, a basal-celled epithelioma of the scirrhous type.

Figure 4. Pathological No. 1521.—A small specimen, 1 cm. in diameter, on the left eyelid, of 6 years' duration, occurring in a woman 35 years of age. This is another example of the scirrhous type seen in Figure 3.

Figure 5. Pathological No. 1256.—A tumor, 2 cm. in diameter, on the side of the nose, of 25 years' duration, occurring in a woman 65 years of age. It is a recurrent tumor. The basal cells have arranged themselves in long chains with tubular lumina. The stroma shows extensive infiltration with small round cells. This is an adenomatous type of basal-celled epithelioma.

Figure 6. Pathological No. 2376.—A tumor, 1 cm. in diameter, occurring on the cheek of a man 58 years of age. The tumor microscopically shows a glandular arrangement of the basal cells with many irregular gland spaces. This specimen, too, belongs to the adenomatous type, although it is very different in appearance from Figure 5.

Figure 7. Pathological No. 2755.—A tumor, 3 cm. in diameter, from the right cheek of a man. This specimen shows two large cysts occurring in a basal-celled epithelioma of the adenomatous type.

Figure 8. Pathological No. 1254.—A tumor, 3 cm. in diameter, of the left ear, 5 years in duration, occurring in a man 56 years of age. The tumor followed a burn and had recurred. The type is medullary and alveolar. Two well-defined pearls are seen in the midst of a mass of basal cells.

Figure 9. Pathological No. 2519.—A tumor of the orbital region, 0.5 cm. in diameter, 14 years in duration, occurring in a man. Microscopically the tumor shows the characteristics of the scirrhous type. In the small strands of basal cells can be seen well-defined pearls.

Figure 10. Pathological No. 2519.—This specimen shows a higher power reproduction of a selected area taken from Figure 9. It demonstrates the unquestionable nature of the epithelial pearls.

#### REFERENCES.

- Krompecher: Der Basalzellenkrebs.  
E. Kaufman: Lehrbuch der Speziellen Pathologischen Anatomie.  
Ribbert: Das Karzinom des Menschen.

PLATE I.

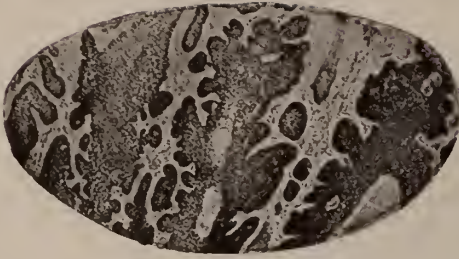


FIG. 1.

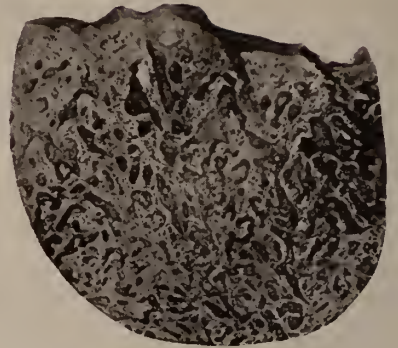


FIG. 4.

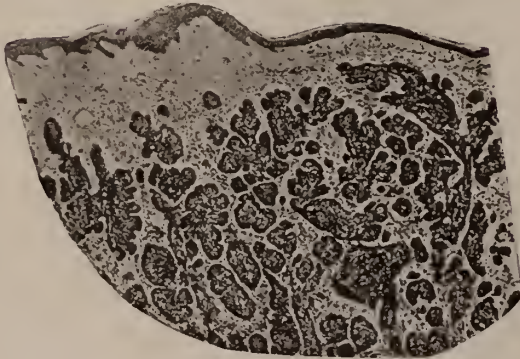


FIG. 2.

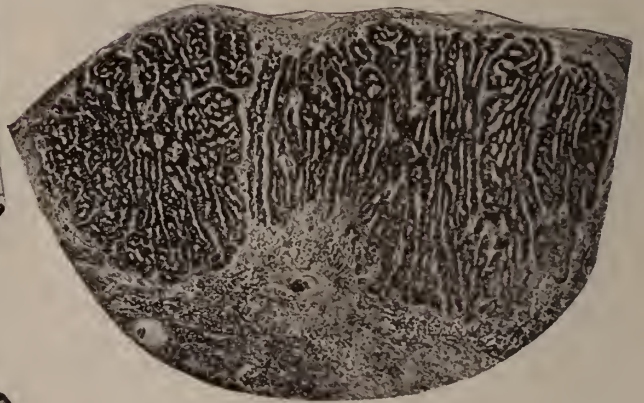


FIG. 5.



FIG. 3.

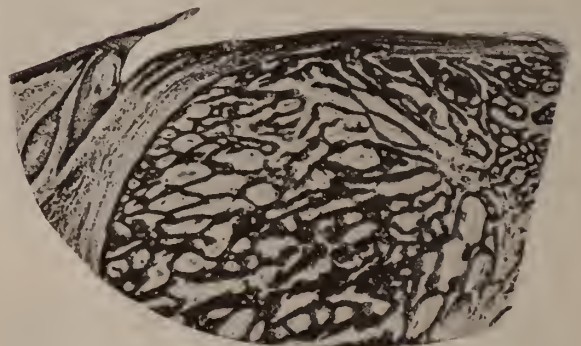


FIG. 6.



PLATE II.

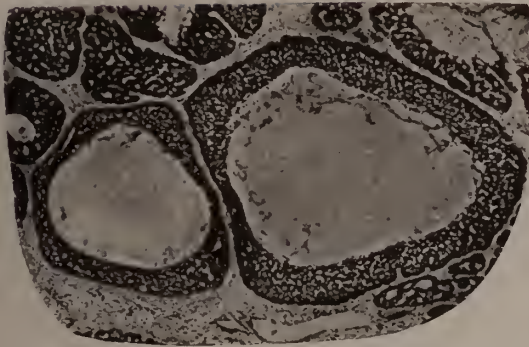


FIG. 7.

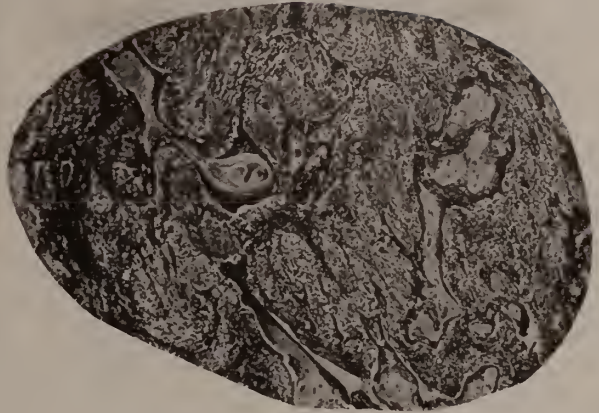


FIG. 8.

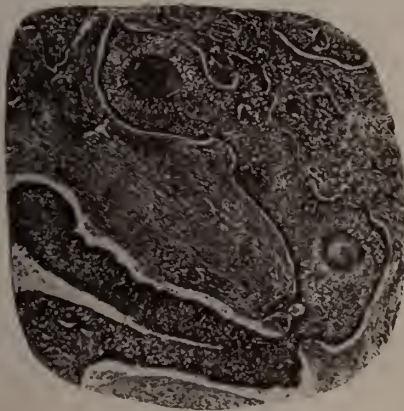


FIG. 9.

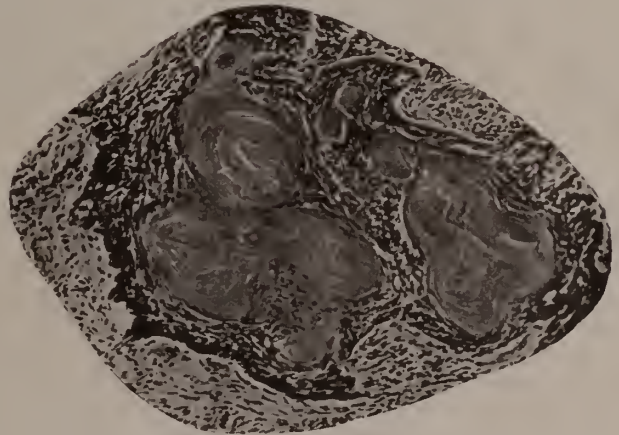


FIG. 10.

DISCUSSION.\*

DR. HARVEY R. GAYLORD, Buffalo: I think it is very difficult to discuss cancer research before a practical section like this. I do not know why it should be so, but it seems so, and perhaps the reason is that in the last ten years of cancer research we have passed through a great many vicissitudes and many things interesting and promising have been suggested, yet from which it is difficult to arrive at that which is practical. Therefore, any discussion on the practical aspects of the cancer problem would have to be accepted by you along the line of suggestion.

First of all, the laboratory investigation of cancer has been material, and most cancer research today has either been started in connection with cancer hospitals, with definite laboratories, or started, as in our institution in Buffalo, as a research laboratory, the object of which is to reach out into the practical fields of

cancer and to establish a research hospital. Perhaps the time has come when those who are engaged in the investigation of this great problem should make it a little more direct and practical for the profession if it is possible to do so. We know it takes many years to establish facts that are to be the property of the practical physician.

I think, first of all, in listening to Dr. Barber's paper, how tremendously our conception of the pathology of tumors has been changed by investigation. I do not criticise Dr. Barber's presentation of the subject, but it is not difficult to point out to you how in research atmospheres many of these questions lose their significance. He presented two hundred cases of basal-celled carcinoma carefully worked up and according to the classical concepts of cellular pathology. He described the scirrhous type of this tumor, the adenomatous type of the tumor, and so forth. He dealt with the question of recurrence and of treatment, but he did not discuss the question

\* On papers by Drs. Squier, Syms, McGuire and Barber.

of determining the effects of the treatment upon these tumors, and in laboratory work where we deal with tumors which are propagated in animals by manipulation we try to determine the histological effect upon a given tumor, so that in our practical department, where we diagnose any material which you may send us, you receive an expert opinion as to the nature of the suspected growth. In that department we are cautioned and greatly guided by what we have learned by experimentation of tumors unknown and definite characteristics under manipulation, so much so it would be fair to attempt a prognosis from the microscopical examination. Furthermore, we should not wish to give a diagnosis without as much clinical data as possible. Dr. Sampson calls every member of the staff into consideration in interpreting any diagnosis which we make of the clinical aspects of the case. The reason is this: Laboratories the world over have studied animal tumors and these tumors are of the fixed type. With the exception of one or two, their characteristics are not changed materially by manipulation. The mouse tumors, like tumor of the breast, retain their histological appearance to a marked degree, yet in the course of manipulation, from tumors of a very sluggish activity their activity in the cavity is so great that they become tumors of the most malignant type. Experimentation has shown that the growth or the history of its growth was affected when inoculated in an animal, and is not the result of these characteristics of the tumor but characteristic of the host in which they are planted. So we speak of a definite knowledge of immunity in cancer. We know that the growth of a tumor when inoculated into an animal has a lesser degree of activity, as the tumor at the time is influenced by the resistance of the animal which is inoculated. So a tumor growing rapidly in a mouse may be so influenced in its growth that the next animal which is inoculated would be killed in a few weeks. It is a tumor which grows slowly and may take on an appearance which under microscopical examination shows it to be a benign tumor. Not only has this occurred, but it has been done experimentally.

One research worker has taken carcinoma of the breast in a mouse and has inoculated partially immunized mice and has produced a tumor with all the characteristics of a benign adenoma and would be so diagnosed. These benign adenomata are potentially carcinoma. I mention that simply to show you how the actual facts and experimental work must modify our conceptions of the diagnosis of tumors under the microscope, and what the difficulties are that the pathologist encounters in offering an intelligent or conclusive opinion regarding such tumors. First of all, the pathologist should have the assistance of the profession. They must give us the best possible clinical data at their command regarding the case, then the pathologist should report

on the nature of the material in the light of the clinical facts furnished to him.

Dr. Barber did not take up the question of the influence of treatment upon these tumors. With a classification of tumors, particularly those of the scirrhus, adenomatous, and rapidly growing tumors, we had to come to a better way of understanding their life history. This we get as we study them over long periods of time and we come to learn the life history of animals and to understand their characteristics.

One of the interesting things in connection with the transplantation of tumors is that mouse carcinoma sometimes develops tremendous activity and growth, and with the greatly increased activity and growth immune phenomena become pronounced. The rapidly growing tumor produces a considerable amount of immunity, and we have the paradox of a highly malignant tumor in mice recovering in one hundred per cent of the cases. With a tumor of such great activity the animal has to be re-inoculated or we lose the influence, and the reaction is such that the animals hardly ever recover from. Such a tumor has the ear-marks of the most malignant types.

One thing I think it would be wise to advocate to the profession as being definite in cancer research is the realization which all investigators have come to without regard to the etiology of cancer. You will find cropping up in the literature this statement, that we should no longer study cancer, but more carefully study cancers. The significance of that understanding is that we have today a certain number of neoplasms in the lower animals about which we know quite a little, and with the knowledge and understanding of one or two neoplasms as to their etiology and behavior, we may draw certain conclusions that are justifiable. We may take incidentally the very striking, convincing and conclusive work of Dr. Rous in chicken carcinoma. It is unnecessary to say that for many years we have classed all malignant neoplasms together with possibly modified or slight exceptions. At any rate we have generalized in the matter of malignancy and metastases, either from carcinoma or from sarcoma. So today we do know without doubt that there is in fowls a group of malignant neoplasms that are sarcomata by every criterion which we go by, and which are caused by filterable viruses. There are investigators who assume that these chicken sarcomata are not such because they are caused by such viruses. These chicken sarcomata do not differ in principle from the neoplasms or sarcomata of mammals.

DR. JAMES A. GARDNER, Buffalo: In discussing Dr. Squier's paper, which he has so ably presented to us, he made mention of my part in a symposium before a recent meeting of the American Urological Association, and which really backs up what he said. I collected about 400 cases from the various surgeons and from

the work of various operators during the past fifteen years, making about 1,700 cases in all.

In operating upon tumors of the bladder various methods were resorted to, such as the use of the cautery, the curettage of these tumors and the excision of them. The statistics were unusual so far as freedom from recurrence afterwards was concerned. Then, there was a division between excision of the growth and a wide resection, either subtotal resection of Squier or the transperitoneal method of the Mayos. There was such a marked improvement with wide resection that if you look over the statistics and study the data you will find it was most marked.

I would like to quote some of the figures showing the mortality from the two operations, whether it was a simple excision or resection. The difference was slight, only about two per cent. But with resection we have from recurrence during the first three years 43.7 per cent, while with excision we have a return of 88 per cent, and with wide resection we have a freedom from recurrence during three years following the operation of 56 per cent, while with excision we have a freedom from recurrence of 11 per cent, so that there is a marked difference in favor of wide resection.

In a series of some 63 cases in which the operation described by Dr. Squier was done or the transperitoneal operation, there was a very much better percentage than by the more simple resection. In this series there was only 10 per cent mortality. At the end of five years 33 per cent of the patients were alive. That shows so much better percentage than anything else that there is no argument left.

The other point I would like to emphasize that Dr. Squier brought out is the unsatisfactory result by the cautery or the use of high frequency in these cases of malignant tumors. In this same series we found there were a good many cases which had been treated as papillomas until some time later they were discovered to be carcinomata. In these cases the treatment was a failure. There were quite a few cases in which the malignant tumors were treated by sparks, hoping to cure them in that way, but in very few were they successful and then the relief was only temporary.

DR. JAMES F. PERCY, Galesburg, Illinois: One thing is certain that the cancer question is still with us, but I do not think that we are quite as pessimistic as we were in the immediate past.

The whole question of dealing with cancer practically is one of getting at it in such a way that you will not stimulate the growth and make the patient worse. In the early cases it is an easy matter to get at the local primary spot and get rid of it, and there is no question about the wisdom of employing surgery to do this; but in the gross mass, the big mass of cancer tissue, the horrible cases that have made sur-

gery of very little consequence and have made surgeons to throw up their hands, we know we cannot use the knife successfully. We also know today that if we use the X-ray or radium, or if we use heat incompletely or imperfectly, we do exactly the same thing with the gross mass that we do with a small mass when we use the knife in these cases.

Now, so far as my own work is concerned in attacking the gross mass of cancer, we go at it with heat. We can accomplish a good deal with a low degree of heat if we keep at it for a sufficient length of time. In the average case it will mean an exposure of an hour and a half, or an hour and a quarter. Where the gross mass is attacked with radium or the X-ray this cannot be done in that length of time. As a result, we get absorption or the patient gets absorption of the broken down cancer cells that are absolutely dangerous as far as the continuation of life in that individual is concerned. Unfortunately, when we think of heat in connection with cancer, we immediately think of the cautery, and cauterization is a mistake in using heat. When you cauterize the heat penetrates about one-eighth of an inch, under favorable conditions perhaps one-half inch. Why not use a low degree of heat, not over 160 degree to 200 degrees F., then your heat will penetrate two or three inches and you will have the mass heated to a greater degree.

In the whole history of surgery, so far as malignancy is concerned, heat has been the only thing that has any influence whatever on these great cancerous masses. The only trouble has been our method of using it.

I was interested in New York a few days ago in talking with Dr. Ewing, when I asked him if he said a few years ago that the balance in cancer was easily upset. He did say that, and it was absolutely true, and the work of Handley in the cases of cancer that were cured spontaneously and followed by fibrosis, the same thing with a low penetration of heat was developed, and that accounts in the main for his successful use of it.

In reference to the paper read by Dr. Squier and to the work of all men who attack cancer, I would like to say that where the cases are on the border line between using the knife or abandoning the knife, I would advise the use of heat. Used as it can be employed today, you will be able to convert a lot of these inoperable cases into operable ones, and you will get results far beyond anything you have been able to obtain so far in these doubtful cases.

A few days ago I was informed at the Mayo Clinic that they had six cases of absolutely inoperable carcinoma of the uterus in which the technic I have developed was used and pan-hysterectomies done from four to eight months afterward. Serial sections were made of this tissue and absolutely nothing was found in the

way of carcinoma. These were not my cases; they were not early cases of carcinoma of the cervix, but far advanced cases.

Dr. Clark, of New Orleans, has reported to me four cases of the same type in which he did the same thing and made serial sections in the same manner, and with absolutely no sign of carcinoma.

I have had two other reports of clinics, each from two other clinicians. So I believe that this statement of Ewing's will prove in days to come that until we get something better, heat is going to show a larger percentage of cases of inoperable carcinoma that can be converted into operable cases and live at least three or five years longer than any other method. That has been the limit the profession has insisted upon that these patients must live in order to show that any real benefit has been done by treatment.

DR. PARKER SYMS, New York City: I would like to say a few words on Dr. McGuire's paper. I operated on a patient three years ago, utilizing that method he has described as far as the sphincters were concerned, with an equally gratifying result, although I doubt if the man can be said to have perfect sphincteric control. He has sphincteric action; he has more or less a rigid rectum owing to the process of healing. Cicatrization has taken place around the rectal tube. In this case I operated by the combined method at one sitting. I removed about four-tenths inches of the rectum, and brought down the sigmoid covered with peritoneum and brought it through the sphincter, removing the lower segment of the mucous membrane as described by Dr. McGuire, which I think is the method of Hochenegg. During the early days after the operation some sloughing started, and I feared there was devitalization of the tissues owing to the high resection, and that I was asking too much, and I might have a sloughing extending up into the peritoneum. I felt shaky as to my patient for two or three days, and during that time I decided that I never again would recommend that method of operation on a patient. Patients may refuse to take what we know is the safest and best line of treatment, for undoubtedly a complete and wide ablation, removing the fat and lymphatics as high as the iliac vessels, doing amputation of the rectum with as wide ablation below as possible, and establishing an inguinal anus is the safest thing for the patient both for his immediate and ultimate recovery.

I have nothing to add except to say this in regard to my own paper: We should employ the radical operation at all times when we feel we should remove the tumor and remove the breast for suspicious malignancy. I refer to those cases particularly of chronic cystic mastitis where the tumor masses consist of adenofibroma or fibroadenoma of which we are sus-

picious, and I am afraid we should often be suspicious of malignancy in these cases. I feel that if we are going to remove a breast at all, we should do it by the most radical means we know of and the Willy Meyer method is the most radical one today.

DR. JOSEPH B. BISSELL, New York: In discussion Dr. Barber's paper said it strikes me that the reason why the basal-celled epitheliomata are more susceptible to the good effects from the use of radium is because of the large connective tissue structure. In the pathological reports made upon the use of radium it has been shown that if radium is properly applied it develops rather numerous connective tissue cells. If those replace the cancer cells it is easy to be seen that the basal-celled epitheliomata are more easily treated by means of radium than by some of the local applications.

DR. ROBERT F. BARBER, Brooklyn (closing): I want to relate a case which came under my observation after these two hundred cases which demonstrates very well some of the points which have been brought out in the paper as regards recurrence.

The day before I came to Buffalo a man came into the office and gave the following history: Seven years ago he first noticed a small lump on the side of the face, but he was not sure whether it was the result of a razor cut or not. One year following this observation it was covered with tissue-paper-like skin, and grew slowly for four years. He then had it treated with carbon dioxide snow. Three weeks later for self-evident reason he had had the snow applied again. He states that the lump grew rapidly after the application of the snow. One year later a surgeon in Kansas City refused to operate and sent him home, and without anything further being done, he worked for another year. The tumor continued to grow, especially in the second year. He then went to Chicago and was operated by a man who is known to you all, a man of national reputation. After complete excision, he was X-rayed for three weeks. He came East and had radium used for five days, and just recently, within a period of a month, he has had radium by a competent man. He has had radium for fourteen days, but came into my office with a recurrence of the tumor. This tumor has involved the superficial tissues, extending down to the periosteum. Remembering that in a certain percentage of the two hundred cases there was bone involvement, the probable thing was that the periosteum was involved, but the bone was not.

In the recent surgical literature radium has been advocated in these cases. Excision has been claimed to give one hundred per cent good result, if properly done. This man had excision, which was properly done by one of the best men in Chicago, and yet the tumor has recurred. He has received radium, and yet the

tumor has recurred. He has been X-rayed, and yet the tumor has recurred.

This tumor belongs to the scirrhous type, with small epithelial cells. It is a basal-celled tumor, and microscopically shows pearls, and the statement that these cases can be cured by radium, by excision in one hundred per cent of instances, is absolutely unjustifiable. If a sufficiently large series of cases of these tumors are taken, I believe it will be found that at least ten per cent of them recur following excision, which is supposed to give the best results.

## ON THE EARLY RECOGNITION OF CANCER OF THE STOMACH.\*

By JULIUS FRIEDENWALD, M.D.,

BALTIMORE, MD.

**W**E must all realize the great importance of the early recognition of gastric cancer, for unless the diagnosis of this affection be made early, the result of surgical interference can only be in the nature of relief, and not of cure. The gravity of this statement can be more fully realized, when I point to the fact that of a series of 266 cases of my own operated on, there is not a single patient living.

The diagnosis of cancer of the stomach is exceedingly simple when the disease is fully developed, but when the affection is still in its incipency there is nothing more difficult; for it is a well-recognized fact that the earlier the stage of the growth, the less positive are its manifestations. If one analyses a series of cases of gastric carcinoma, one finds that the patients developing this affection are not as a rule chronic dyspeptics, and excepting in those instances in which the disease has developed from a previous gastric ulcer, have usually been in good health with a normal digestion, until the onset of this disorder. That the onset of this affection is sudden in a large proportion of cases is a fact of great value in the early diagnosis of this disorder.

In arriving at an early diagnosis, the most important signs and symptoms must be taken into consideration.

1. *Anorexia*.—Anorexia is a very prominent symptom of gastric cancer, and was present in over 89 per cent of our cases. It varies markedly from a slight loss of appetite to an absolute aversion of food.

The aversion for meat which frequently occurs early in the disease is of some diagnostic importance.

2. *Vomiting*.—Vomiting is also of frequent occurrence in gastric cancer, appearing in 89 per cent of our cases, in 67 per cent of which it was in no way associated with the ingestion

of food. While this symptom is exceedingly frequent, it occurs so irregularly, and bears such slight relationship to food that it can be accorded only minor importance in diagnosis.

3. *Pains*.—In our cases pain was present in 93.1 per cent. It was present as an early sign in 84 per cent of our cases, but on account of its variation as to location and extent its diagnostic significance as an early sign of gastric cancer is lessened.

4. *Hematemeses*.—Gastric hemorrhages occurred in 22.7 per cent of our carcinoma cases of which 88.7 per cent were multiple, and 10.8 per cent single hemorrhages. It appeared as an early sign in 21 per cent of these cases, and as a late sign in 79 per cent. Inasmuch as gastric hemorrhage appears early only in a small proportion of cases this sign can only rarely be relied upon, as an early sign of this disease, but when it occurs especially in the coffee ground form it presents additional evidence in the diagnosis.

5. *Melena*.—Tar colored stools appeared in 18.9 per cent of our cases, much less frequent than hematemesis, but in only a small proportion of these cases did it appear as an early sign, that is in 14 per cent, while it appeared late in 86 per cent.

*Occult Blood*.—A positive reaction for occult blood was obtained in 92.5 per cent of our cases. When occult blood is once observed, it can usually be found at any time afterward. The presence of occult blood is a very constant as well as an early sign of gastric cancer.

6. *Dysphagia*.—Dysphagia existed in 6.9 per cent of our cases, that is in those cases in which the growth involved the cardiac orifice. It appeared as an early sign in 78 per cent of these cases, and according to our experience when present in patients over 40 years of age is a sign of great significance.

7. *Loss of Flesh*.—Loss of weight is a sign of considerable value. It occurred in 98.5 per cent of our cases in which there was a loss of flesh of from 5 to 78 pounds. This sign is of importance as an early sign of cancer, yet periods of improvement with gain of flesh are not uncommon in the early period of the disease, and this should be borne in mind in the early diagnosis of gastric cancer.

8. *Presence of a Palpable Tumor*.—While the presence of palpable tumor is the most valuable diagnostic sign of gastric cancer, yet this sign is usually a late manifestation of the disease.

9. *Dilatation of the Stomach*.—Dilatation of the stomach due to pyloric stenosis occurred in 47 per cent of our cases, and this condition when present early is of the greatest diagnostic value. It occurred as an early sign in 52 per cent of our cases of gastric cancer.

10. *Ascites and Edema of the Extremities*.—Ascites or edema appeared in 21.1 per cent of

\* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1915.

our cases, but only in 24.6 per cent of these cases were these signs presented before the first six months after the first appearance of symptoms, indicating that both ascites and edema are late manifestations in gastric cancer.

11. *Certain Roentgenological Findings.*—Roentgen ray examinations have been of great help in many instances in the diagnosis of gastric cancer. Inasmuch as the largest proportion of cancers have their seat at or around the pylorus, early obstruction is not infrequent. In the early stages of this disease the obstruction is incomplete, and it is only by means of the X-ray, that beginning or partial obstructions of the stomach can be determined.

The most important X-ray evidence, however, of cancer is a filling defect, which remains constant in all of the plates. When the disease has been present for some time, that is in advanced cases, the defect is large, and very irregular, and there is an absence or peristalsis at this area. In the early cases, however, there is but a slight thickening at the cancer area with weakened peristalsis, which usually makes the diagnosis exceedingly doubtful and even at times impossible.

12. *The Gastric Secretion.*—In 89 per cent of our cases there was an absence of free hydrochloric acid. The absence of free hydrochloric acid is an early sign in many instances, and when taken in conjunction with other symptoms, is a sign of real importance, and yet an absence of hydrochloric acid is so frequently observed in affections other than cancer, that this sign loses much of its significance.

It appeared as an early sign in 76 per cent of our cases. The diagnosis of cancer is greatly strengthened when in the absence of free HCl lactic acid is found. The Oppler-Boas bacilli were observed in 79 per cent. They were found only in those instances in which lactic acid was observed, and appeared as an early sign in 74 per cent of our cases. This finding when accompanied by the presence of lactic acid, and an absence of free HCl is a sign of great diagnostic importance.

13. *The Wolff-Junghans Test.*—We have utilized the Wolff-Junghans test in 52 of our cases of gastric cancer. In all of these cases there was an absence of free hydrochloric acid. In 44 cases (84.6 per cent) there was a positive reaction obtained. Of these 14 were early cases, and the reaction was positive in 11 (79.5 per cent). This test is an extremely valuable sign when positive in the early diagnosis of gastric cancer especially when there is an absence of free hydrochloric acid, and when lactic acid is present in the gastric contents.

14. *Serodiagnosis by Abderhalden's or Kelling's Methods.*—Inasmuch as many of the signs and symptoms of gastric cancer are often indefinite and late manifestations of the disease, it has been hoped that serum tests might reveal

early evidence when the physical signs are yet indefinite and misleading. It must be remembered, however, that in order that conditions favorable for obtaining positive reactions may exist that the growth must have assumed at least such proportions as to produce a generalized blood reaction with ferments or with antibodies in the blood.

15. *Abderhalden's Serum Test.*—My colleague, Dr. Charles E. Simon, has tested this reaction in a number of my cases of gastric carcinoma, and finds that the reaction cannot be considered specific for this disease, for there may be a variation in two directions as there may be failure to get the reaction in undoubted cases of malignancy, and on the other hand there may be obtained a positive result in conditions which are not malignant.

16. *Kelling's Serum Test.*—Recently Kelling has described a serum test for the diagnosis of carcinoma based on the fact that the serum of patients affected with cancer possessed the property of dissolving the red corpuscles of certain other species, notably the hen. He noted the hemolysis after incubating equal parts of the diluted serum in a five per cent suspension of hen's corpuscles for 24 to 48 hours. Kelling found that this test gave positive reactions in 90 per cent of cases of gastric cancer.

Dr. Simon has tested this reaction in a number of my cases of gastric cancer, and finds that it is in no way specific of this disease. The reaction occurred in other conditions and was not present in a number of cases of cancer.

In drawing our final conclusions concerning the significance of the various signs, and symptoms of gastric cancer, it is quite evident that many are general manifestations frequently present in other gastric affections, and not characteristic of this condition alone, while those which are more characteristic are usually late developments. On this account, the late diagnosis of cancer is rendered exceedingly simple, while on the other hand, the early diagnosis is, however, exceedingly difficult.

In reaching definite conclusions, it is therefore important to rely not upon a single sign or symptom for there are no pathognomonic signs of early cancer, and only after a critical review of the history, physical examination and study of the symptoms, including examination of the gastric contents and stools, can definite conclusions be drawn.

Inasmuch as surgery offers the only cure for gastric cancer, and then only when the diagnosis is made early, the question of early diagnosis is of the greatest importance. How can this be made?

As yet, it is impossible to reach very definite conclusions at the early stage of the disease, except in rare instances. But it behooves us to carefully observe all of our cases of gastric disturbances most carefully, and to view with sus-

picion all patients over forty years of age, who show no improvement after a short course of medical treatment.

Inasmuch, therefore, as our means of early diagnosis of cancer of the stomach are exceedingly insufficient, and until more certain methods of diagnosis are available, exploratory incisions should be urged upon all individuals over forty years of age, having gastric symptoms which are not relieved after a few weeks of treatment, especially is this the case, if the patient presents a history of rather abrupt onset, some loss of flesh, an absence of free hydrochloric acid in the gastric contents, and occult blood in the stools.

Even under those conditions many cases will be operated on too late for there can be no question but that gastric cancer may be present for some time and may assume considerable proportions even before marked symptoms of indigestion are manifested.

## Medical Society of the State of New York

### COUNTY SOCIETIES

#### MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN.

SEMI-ANNUAL MEETING AT SARANAC LAKE, JUNE 8, 1915.

After a dinner, which was served at the "Berkeley Grill," at 1 P. M., the Society was called to order at 2.10 in the Free Library Building.

The president and vice-president both being unavoidably absent, Dr. F. F. Finney was chosen president pro tem.

The minutes of the last meeting were read and approved.

Robert C. Paterson, M.D., of Saranac Lake, was elected to membership.

The following candidates were nominated, to be elected at the next annual meeting for the year 1916: For President, Dr. A. L. Rust, of Malone; for Vice-President, Dr. W. U. MacArtney, of Fort Covington; Secretary-Treasurer, Dr. G. M. Abbott, of Saranac Lake; Delegate to State Medical Society, Dr. J. A. Grant, of Malone; Alternate to State Medical Society, Dr. F. W. McCarthy, Bangor; Delegate to Fourth District Branch, Dr. C. A. Hastings, Malone; Alternate to Fourth District Branch, Dr. H. A. Bray, Ray Brook; Censor for three years, Dr. A. E. Moody, of St. Regis Falls.

The scientific program was then taken up and the following papers were read:

"An Outline of the Status of Radium in Therapeutics," W. B. Soper, M.D.

Discussed by A. K. Krause, M.D.

"The Skin Test for Tuberculosis," F. H. Heise, M.D.

Discussed by Drs. L. Brown, Kinghorn, Baldwin and Krause.

"Medical Inspection of Schools," Wm. A. Howe, M.D., Albany, N. Y., State Educational Department.

Discussed by S. W. Outwater, M.D., Local School Inspector.

"Roentgen Ray as an Aid to Diagnosis," H. L. Sampson, M.D.

#### ESSEX COUNTY MEDICAL SOCIETY.

MEETING AT ELIZABETHTOWN, JUNE 1, 1915.

The meeting was called to order at 2.50 P. M. by the President, Dr. C. B. Warner. Roll call showed the following members present: Drs. Barton, Breen, Canning, Cummins, Dowd, Evans, Liberty, Payne, Proctor, Savi- ville, Sherman, Smith and Warner. In addition to the

members, the following gentlemen were present: Drs. Culver and D'Avignon, of Au Sable Forks; F. H. C. Heise and F. B. Trudeau, of Saranac Lake, and Mr. Sampson, Radiographer at the Adirondack Cottage Sanitarium, Saranac Lake.

The minutes of the last meeting were read and approved.

The Board of Censors reported for membership: Drs. George J. Culver and F. J. D'Avignon, of Au Sable Forks.

On motion, duly seconded and carried, the Secretary cast one ballot and they were declared duly elected.

Motion was made, seconded and carried, that the President appoint a *Milk Commission* of five members for the purpose of certifying the milk of any dairies in the county applying for certification.

The President appointed: Drs. M. E. Proctor, J. H. Evans, T. J. Dowd, J. D. Smith, E. R. Eaton.

Motion was made, seconded and carried that the President appoint a committee to draft resolutions of regret at the death, on November 19, 1914, of Dr. H. W. Rand, of Keene.

The President appointed: Drs. J. H. Evans and F. M. Noble.

#### SCIENTIFIC PROGRAM.

Dr. Francis B. Trudeau, of Saranac Lake, read an instructive paper on Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis, demonstrated the apparatus used and showed many X-Ray plates of conditions in the thorax before and after treatment. Dr. Sampson, Radiographer of the Adirondack Cottage Sanitarium, assisted in demonstrating the plates.

Dr. J. P. J. Cummins, of Ticonderoga, read an interesting paper on Diagnosis of Ectopic Pregnancy.

A discussion followed of both papers.

Dr. F. H. C. Heise, of the Staff of the Adirondack Cottage Sanitarium, spoke informally on the value of Radiography in the diagnosis of pulmonary tuberculosis and emphasized its great usefulness.

A rising vote of thanks was extended to Drs. Trudeau and Cummins for their papers.

#### MEDICAL SOCIETY OF THE COUNTY OF CLINTON.

SEMI-ANNUAL MEETING, PLATTSBURG, N. Y., MAY 18, 1915.

The meeting, which was called to order in the Plattsburg Club with an attendance of thirty-two, was opened by a luncheon, followed by the business session. The following officers were nominated to be elected at the annual meeting in November:

President, Leo F. Schiff; Vice-President, W. H. Everett; Secretary, T. A. Rogers; Treasurer, J. G. McKinney; Censors, W. E. Clough, F. M. Holcombe, W. M. Taylor; Delegate to the State Society, R. S. Macdonald.

Moved, seconded and carried that an invitation be extended to the Fourth District Branch to hold its annual meeting in October at Plattsburg.

Dr. Ransom, President of the Fourth District Branch, gave interesting reports of the recent annual meeting of the State Society, and of the last annual meeting of the Branch, which was held at Gloversville.

#### SCIENTIFIC SESSION.

"The Early Diagnosis of Cancer of the Stomach," illustrated with X-ray plates, Irving S. Haynes, M.D., New York.

Discussion: Grant C. Madill, M.D., Ogdensburg; Casius D. Silver, M.D., Plattsburg.

"Psychiatric Outlines," Thomas A. Rogers, M.D., Plattsburg.

Discussion: Charles H. North, M.D., Dannemora.

#### MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON.

SEMI-ANNUAL MEETING, HARTFORD, N. Y., MAY 11, 1915.

The meeting was called to order at 11.30 A. M.

The minutes were read and approved. After the

meeting of the Comitia Minora the general meeting was called at 2 P. M.

#### SCIENTIFIC SESSION.

"A Study of Some Interesting Cases of Protozoan Infections," Thomas W. Jenkins, M.D., Albany.

"Presentation of Some Cases and Maps Illustrating the Efficiency of Typhoid Vaccination, in Checking an Epidemic of Typhoid, Where Ordinary Precautions Could not be Enforced," William L. Munson, M.D., Granville.

Discussion by Morris Maslon, M.D., Glens Falls; Charles S. Prest, M.D., Waterford; Clifford W. Sumner, M.D., North Granville; Robert C. Davies, M.D., Granville; Thomas W. Jenkins, M.D., Albany.

"Status Lymphaticus, with Autopsy," Clifford W. Sumner, M.D., North Granville.

#### MADISON COUNTY MEDICAL SOCIETY.

SEMI-ANNUAL MEETING, AT CANASTOTA, N. Y., MAY 11, 1915.

The meeting was opened with a banquet at the Weaver Hotel, given in honor of the fifty-third anniversary as a practitioner of medicine of Dr. William Taylor. There were about twenty physicians present, and the President, Dr. A. R. Thomas, presided. Many positions of importance have been held by Dr. Taylor in the county during his many years of practice, he having been a member of the Board of Education for a number of years and at one time its President. He also held the position of Health Officer of the county.

Dr. Taylor responded to the toast with a paper on "Fifty Years of Medical Practice," in which he began by speaking of his classmates, Dr. J. Mott Throop and Dr. George M. Munger, who had been honored members of the Society for many years, but who had now passed to their reward. He spoke of his services in the Civil War, stating that his regiment was with the Army of the Potomac through all its defeats and victories, and during the siege of Richmond and Petersburg had charge of the post hospital at City Point. The doctor stated that in this latter service he learned many facts regarding typhoid fever and chronic dysentery which have proved of value to him through his fifty years of practice. After leaving the army Dr. Taylor stated that after practicing for several years in Onondaga County he settled permanently in Madison County. He spoke of the many difficulties encountered by physicians in his early days in their efforts to prevent and fight disease, owing to the unsanitary conditions which prevailed. That while he was health officer, more than thirty years ago, he was nearly powerless to enforce sanitary laws and regulations, as there were but few, if any, laws to assist him. He contrasted these times with the present days, when health officers are armed with authority and have the power to stamp out epidemics and to enforce precautions to prevent the outbreak of contagious diseases. He also spoke of the wonderful advance that has been made in surgery, and of the many operations which are performed today with little or no danger which were impossible in his early practice.

#### MEDICAL SOCIETY OF THE COUNTY OF SENECA.

REGULAR MEETING, SENECA FALLS, N. Y., MAY 13, 1915.

After a short business session, followed by luncheon at 12.30, the general meeting was called for the

#### SCIENTIFIC SESSION.

"The Oculist and the General Practitioner," Louis A. W. Alleman, M.D., Geneva.

"The Prevention of Blindness," Frank P. Knowlton, M.D., Syracuse.

#### COUNTY OF ROCKLAND MEDICAL SOCIETY.

REGULAR MEETING, PIERMONT, N. Y., JUNE 2, 1915.

The Meeting met in the Piermont Boat House. Dr. George A. Leitner gave a clam chowder collation to all who were present.

The President, Dr. S. W. S. Toms, presided.

Pathological specimens bearing on the subject of cancer were shown by Dr. Daniel S. Dougherty, of the City Hospital, New York.

Dr. Frederick T. van Beuren, Jr., New York, Director of the American Society for the Prevention of Cancer, read a paper on "Some Practical Points in the Control of Cancer."

Addresses were given by Wisner R. Townsend, M.D., Secretary of the State Society, and others.

The Rev. Dr. Prentice, of Nyack, outlined the activities of the Committee of Fifty.

Moved, seconded and carried that a request be again made to the supervisors to establish a tuberculosis hospital in the county, and a petition of the County of Rockland Medical Society was signed by the entire membership, to be presented in co-operation with the State Charities Aid Association, the State Department of Health and the County Tuberculosis Committee.

#### MEDICAL SOCIETY OF THE COUNTY OF LIVINGSTON.

REGULAR MEETING AT SONYEA, MAY 4, 1915.

Meeting was called to order at the Craig Colony for Epileptics on May 4, 1915. President, Dr. J. F. Munson, in the Chair. Resolutions were passed upon the death of Dr. R. J. Menzie, of Caledonia.

Moved, second and carried that the regular summer meeting be held at Portage Falls in July, in conjunction with the Allegany, Wyoming and Genesee County Societies.

Dr. Clayton M. Brown, of Buffalo, read a paper on "Preventable Deafness."

Dr. Thew Wright read a paper on "Gall Bladder Surgery."

Case reports were presented by Drs. Strassenburg, Haskins and Burt.

A number of guests were present from Warsaw, Castile, Perry, Silver Springs, Buffalo and Rochester.

#### MEDICAL SOCIETY OF THE COUNTY OF SARATOGA.

REGULAR MEETING, SARATOGA, JUNE, 1915.

The meeting was called to order in the Homestead Tuberculosis Sanitarium. There was an attendance of about thirty physicians.

The Scientific Session consisted of a symposium on Tuberculosis.

"The Scope of the Work of the County Tuberculosis Sanatorium," Edwin J. Kibbe, M.D., Medical Director of Montgomery County Sanatorium.

"Some Practical Suggestions of the County Sanatorium Work," Montgomery E. Leary, M.D., Medical Director, Monroe County Sanatorium.

"Some X-ray Findings in the Examinations of the Tuberculous Patient," Horace J. Howk, M.D., Medical Director of Metropolitan Life Insurance Sanatorium, Mt. McGregor, N. Y.

The inspection of the buildings and plant, which was part of the program, proved most interesting and instructive.

### Deaths

JAMES G. CLARK, M.D., West New Brighton, died April 9, 1915.

HENRY GRAY, M.D., Greenwich, died June 20, 1915.

HENRY HOFFMAN, M.D., Brooklyn, died June 24, 1915.

ALFRED W. MAYNARD, M.D., New York City, died March 20, 1915.

WILLIAM ANDREW OLIVER, M.D., Penn Yan, died April 6, 1915.

ROBERT W. WARNER, M.D., Ilion, died April 18, 1915.

FANEUL D. WEISSE, M.D., New York City, died June 22, 1915.



# NEW YORK STATE JOURNAL OF MEDICINE

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AUGUST, 1915

No. 8

## EDITORIAL DEPARTMENT

### MEDICAL ECONOMICS.

**A** DEFINITION of medical economics could be said to mean, though in a somewhat restricted sense, the preservation of the legitimate material reward of a physician for services rendered to the community at large or to the individual.

This reward should be adequate to permit him to live in a manner compatible with health, comfort, and freedom from financial worry. Thus he would be enabled to mentally and physically employ his medical knowledge to its utmost limit. In a higher and broader application it means the possession of the inherent rights and privileges of citizenship and the non-interference of the state or municipal authority with the legal practice of medicine by physicians in their relationship to social economics.

The requirements now demanded by the state for a license to practice medicine are properly exacting and when granted it is incumbent upon the state to prevent an invasion of their legitimate field of labor by corporate bodies or individuals.

The incomes of general practitioners have

for the past four years been gradually growing less. If common report be true, and we believe it to be so, 50 per cent of the general practitioners of New York City at present find it difficult to meet their current expenses, economize as they will. It is surely a trying position for a doctor after years of practice to find the results of his work to be a state of poverty and a future shrouded in gloom.

There should be some way to change for the better the existing order of medical practice from an economic standpoint. The subject has been written about, talked about, and fought about, but no well-defined plan has been developed or even outlined to regulate or bring into harmony the many forces inimical to the social well-being of the doctor. There are many successful medical men who view with concern the ever-increasing hardships of their less fortunate brethren and await the formation of some plan of reconstruction that evidences possibilities of success.

It is thought by some that wider publicity in agitating the question of economics would enlist the support not only of the majority of the medical profession but also of trustees and

boards of managers of independent and municipal hospitals, and citizens engaged in the work of municipal reform. Hospital trustees are so engrossed in the success of the institutions with which they are affiliated that unless some advantage can be derived from their participating in our attempt to secure concessions they are not apt to manifest any great interest in our affairs. Municipal reformers should view the subject more from a philanthropic than an economic aspect. Thus we are left to fight along our own lines.

We most heartily commend the good work done by the Department of Health of New York City, but the thought comes to our minds that in its various activities it passes beyond the confines of preventive medicine—to the practice of medicine. Preventive medicine is so far-reaching in its possibilities that we admit it is difficult to differentiate where preventive medicine ends and the practice of medicine begins.

The prevention and control of pestilential diseases is emphatically the object of the Department of Health, but the treatment of individuals for non-contagious diseases in clinics is an innovation which, though commended by the public, affects the economic status of the physician. The question is a delicate one. The sick poor should receive treatment. If the Health Department is in a better position at the present time to give it, well and good. But it should be shown to the Legislature that this is beyond the province of the Department of Health and should be under the auspices of the Commissioner of Charities, where in time a systematic supervision could be observed over applicants for medical charity. This would prevent the advancement of the Department of Health into the domain of the practice of medicine.

One of the many debatable activities of the Department is the issuing of employment certificates to children; 47,000 such certificates having been issued in 1913, after examination by the health authorities. Is it not fair to assume that a certain percentage of the parents or guardians of these applicants could have paid

their family physician one dollar for as careful an examination as that made by the Department?

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#### “A PRIVILEGE OF THE FAMILY MEDICAL ATTENDANT.”

**T**HERE exists considerable confusion regarding the rights of the family medical attendant and the physician ostensibly employed by employers, in reality in most instances by casualty companies to attend injured employees.

When the injured employee notifies his employer that he requires medical attention and is satisfied with the medical attendant sent to his home by his employer no objection can be urged against this mode of procedure.

But when the employee expresses a wish to be attended by his family medical attendant that desire should be acceded to.

It would be an invasion of his personal rights to be compelled to submit to treatment by a physician objectionable to him or in whom he has no confidence.

It is easily understood that employers for pecuniary and confidential reasons would prefer to have their injured employees treated by physicians of their own selection but the patient has likewise undeniable reasons to prefer to be treated by a physician of his own choice. In several cases where conflict of authority arose the *JOURNAL* was appealed to for advice. Without qualifications it expressed the opinion that when the family physician was called to the home of the injured employee his authority was not to be questioned, at the same time stating that every courtesy be extended to the employer's representative and opportunity granted to him to watch the development of the case. Where the injured employee is sent to a hospital, he must, of course, abide by the regulations of the institution to which he is admitted. If these mutual privileges are understood and concurred in, it will do away with a great deal of unpleasant friction.

## Original Articles

### THE MIDWIFE PROBLEM IN THE STATE OF NEW YORK.\*

By JOHN VAN DOREN YOUNG, M.D.,  
NEW YORK CITY.

AT the One Hundred and Eighth Annual Meeting of The Medical Society of the State of New York, held in New York City April 28, 1914, I presented the following resolutions to the House of Delegates:

WHEREAS, The demand for better obstetric care has directed increased attention to the practice of midwives, and

WHEREAS, Necessity demands that the supervision and training of midwives should be undertaken by the State, and

WHEREAS, At the present time there does not exist in New York State any such supervision and regulation, therefore be it

*Resolved*, That the President of The Medical Society of the State of New York appoint a committee of five members who shall immediately after their organization begin a study of the subject as it presents itself in this State, and file their report with the House of Delegates of the State Society at the meeting in 1915.

In pursuance of this resolution, the president, Dr. Grover W. Wende, appointed the following committee:

John Van Doren Young, M.D., New York City, Chairman.

O. Paul Humpstone, M.D., Brooklyn.

John A. Sampson, M.D., Albany.

Frederic W. Sears, M.D., Syracuse.

Peter van Peyma, M.D., Buffalo.

During the summer Dr. Sampson, of Albany, resigned and Dr. George W. Kosmak, of New York City, was appointed. The committee felt that while they were sorry to lose Dr. Sampson, they were exceedingly fortunate in securing the co-operation of one so well informed upon the subject as Dr. Kosmak.

From the outset of the work we have realized the bigness of the problem and the difficulties confronting an investigation, and the still greater difficulties of any committee in offering a substitute for the midwives other than simply to say dogmatically, "eliminate the midwife."

For practical purposes the question may be considered under two heads, the midwife in the City of New York, and the remainder of the state.

The ethical question is the same whether in New York City, Rochester, Buffalo, or the outlying districts of the state, but the practical question is quite different. Let us consider for the moment the question in New York City. Six years ago there were approximately 3,000 known midwives in the city; today there are 1,448 reg-

istered, whose work is supervised by a special bureau of the Board of Health, and whose ranks are recruited from the graduates of one recognized school for midwives in the city, the Bellevue Hospital School for Midwives. It is a startling fact, nevertheless true, that this body of 1,448 midwives deliver approximately 53,000 babies per year; that all the lying-in hospitals in New York City can care for is 11,000. There are 5,427 practicing physicians in New York City. If the midwives were abolished this would give to all physicians registered in New York City about nine confinements to look after per year. If you eliminate the various specialists who do not do obstetrical work and throw this enormous volume of work upon those who actually do the obstetrics of the city, it would probably mean from 20 to 25 cases per year to each physician.

Is there any ethical reason in the light of the foregoing figures, why the state, and especially the medical profession, should allow about 1,700 violators of the law to do an enormous amount of work affecting in New York City alone over 100,000 lives per year? When you realize that this, in ten years, affects the life and health of half a million babies and the future health and welfare of not less than 350,000 to 400,000 women, the enormity of the problem is at once apparent to you. Whether in a small outlying district of a manufacturing town one or two midwives ply their vocation, known to every practitioner in her neighborhood, and whom she feels she can call upon in the slightest trouble, will do proportionately as much harm as the 1,400 midwives in a large city is a question hard to answer.

On the other hand, one is face to face with the question, should you eliminate the midwife, what will you substitute? The answer to this question is the reason for this discussion. It is an admitted fact that the problem is so complex that the immediate elimination of the midwife is an *economic impossibility*. I feel sure that eventually the midwife will be a relic of the barbaric past, and that this field of medicine will be in the hands of those qualified as physicians to give such service as the pregnant and parturient woman has a right to demand.

The whole problem is summed up in the right of the expectant mother to the best possible obstetric care, and this paper is a plea for better obstetrics, for a realization by all practitioners of medicine, in or out of the cities, that there is no more noble work or no work more worthy of their best endeavor than the study and care of the obstetric case. Surely nothing can be more important to the health of the nation than the care given to its mothers, who are the fountain-head of the future generation.

The excuse has been frequently offered for the existence of the midwife by the statement that she is not hurried, that she gives to the

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

woman better practical care than the over-worked, careless and perhaps dirty physician. This is no answer to the question. Better obstetrical care must be obtained by an improvement in the obstetrical training of the physician, and a realization by him of the fact that no more important work will ever fall to his lot to perform, and also by a realization on the part of the public of the necessity of care through her entire pregnancy. This will, in turn, cause them to realize the fact that the obstetrician must be better paid, and this, in turn, will attract more men to the field.

A word as to the history of the midwife. The origin of the midwife is lost in the mists of the past. Ebers papyrus, 1550 B. C., is the earliest known medical production and contains prescriptions for the causing of abortion, for promoting labor and curing displacement of the uterus. Even Moses himself owed his safe lodging in the bullrushes to Puah and Shiprah, two midwives who defied the order of Pharaoh. At this time midwives were recognized as a class in Egypt, and therefore antedate by many centuries the advent of the physician in this field of labor, as it was not until the middle of the tenth century that women were attended by any save their own sex. In Greece the skilled attendants were, as with the Egyptians and Hebrews, midwives. The writings of Hippocrates show us that up to that time the physician had studied only abnormal cases, leaving all of the subject of obstetrics and the delivery of women to the midwife, his chief function being the dismemberment and removal of the dead fœtus.

The classical writers of Greece tell us that women have charge of parturient women, that divine aid is sought, and goddesses are invoked to facilitate labor. Gods or men were only called in in the gravest necessity, as when Apollo rescued the infant Aesculapius by performing a Cesarean operation on the dying Semele.

The earliest recorded contribution to medical literature on the subject of obstetrics is by one Aspasia, who imprinted her teachings upon the work of later authors. Up to 1600 the midwife had undisputed sway in obstetrical work. In the next fifty years several French and English medical men began to write upon the subject. In 1671 Jane Sharp wrote "The Midwives' Book, or The Whole Art of Midwifery Discovered." About this time midwives in France and Germany published books of a similar character. It may have been the necessity of asserting their power and the fear of losing their hold upon the people that demanded these writings, as it was about this time that medical men began to be called in to natural labors. From this time on the midwife lost her hold upon the practice of obstetrics, and medical men began to realize that the work was worthy of the best efforts of the best men.

It is well to remember that the efforts to control, regulate, educate and improve the midwife date as far back as the close of the seventeenth century, and how much had been accomplished is graphically brought out by a quotation from Dr. J. Clifton Edgar's article written in 1911: "That over 90 per cent of the midwives in New York City are hopelessly dirty, ignorant and incompetent." This was from the work of Miss Crowell in the year 1906. This brings us naturally to the question of control and education. The earliest efforts in this work were begun abroad. In France there were two classes, one that was allowed to practice in any part of France, and had a superior standing, while those of the second class were restricted. They were allowed to vaccinate and prescribe certain antiseptic preparations. They were not allowed to use instruments and must call in a medical man in difficult cases. In Spain midwives are allowed to practice after passing the examination covering studies at least four half-years. The system in Germany is most elaborate and I shall leave its fuller outlining to Dr. Kosmak, who will discuss this paper, who from personal observations of its working, is able to speak authoritatively as to its value in Germany and its possible use in America. Midwives are recognized in Italy and are compelled to pass an examination and obtain a diploma. In Russia the midwife is under the Medical Department of the Minister of the Interior. Each town has a senior midwife and a number of junior midwives in proportion to the population. In Norway, Sweden, Denmark and Holland midwives are licensed after examination. In England there was no regulation of any kind up to 1902, when the first effort was made to control them. The system in England is under a central Midwife Board, whose duties are to regulate and issue certificates, and the conditions of admission to the roll of midwives to regulate a course of training, taking examinations, to supervise and restrict their practice, and to publish a roll of duly certified midwives, and to eliminate undesirable. Further requirements of the law take up in detail the supervision of their work.

In the United States no effort was made to control the midwife and regulate her practice until very recent years. In 1906 the first serious effort was made in New York City; in that year the Board of Health took upon itself the work of regulating the practice of midwives, and from that time until the present a great work has been accomplished through their efforts, and especially the labor of Dr. S. Josephine Baker.

The regulations as now carried out by the Board of Health in New York City are of the greatest importance both to the midwife and to the health of the community. Briefly outlined, they are as follows:

All midwives are compelled to register with the Board of Health, who have the arbitrary

right to decide upon the issuance of the license. This power is carried out with absolute justice. A sample copy of the application blank is herewith exhibited.

A circular is issued by the Board of Health showing amount of education required, together with an outline of the studies to be followed in a given school. The only school recognized by the Board of Health is the Bellevue Hospital School of Midwives, the course of which is six months and the training excellent.

Rules governing midwives are published in pamphlet form in English, French, German, Italian and Hebrew. The midwife is provided with proper blanks for registration of births, postal cards for notification to the Board of Health in case of sore eyes.

The Department of Child Hygiene keeps a rigid supervision of the work as carried on by the midwife, her general character and the supervision of her armamentarium, her general cleanliness in so far as possible, and the results to child and mother.

The midwife is instructed in the care of the eyes, general rules of cleanliness, and when to call in a physician.

Important developments in the saving of blindness by the use of nitrate of silver provided by the Board of Health have been demonstrated by the writings of Dr. Baker and Miss Van Blarcom.

The Board of Health of New York City has grappled with a most difficult and complex problem in a masterly way, and has accomplished an enormous amount of work with its munificent benefits by developing a supervision and management of the midwife that is second to none in the United States.

The Board of Health of the State of New York is taking the first steps looking to a similar management of the question in the whole state. Its first effort was the issuance of Chapter IV of the Sanitary Code, the object of which is to obtain the registration throughout the state of all midwives, and later the regulation. This part of the problem will be dealt with fully in a paper by Dr. Linsly R. Williams, which follows mine.

Rochester and Buffalo have dealt drastically with the problem and have the situation well under control.

There is one side of the midwife question that has not been dealt with in any of the articles that I have read upon the subject, and that is the criminal practice of the midwife. From my experience as secretary of The Medical Society of the County of New York I am fully convinced that this is an important factor and should be taken into consideration in all investigations of the subject. The Medical Society of the County of New York have prosecuted

ninety-nine midwives for criminal practice, with the following result:

|   |    |
|---|----|
| Convicted, fined and paid \$500 .....           | 2  |
| “ “ “ “ 250 .....                               | 5  |
| “ “ “ “ 200 .....                               | 1  |
| “ “ “ “ 150 .....                               | 2  |
| “ “ “ “ 100 .....                               | 7  |
| “ “ “ “ 75 .....                                | 2  |
| “ “ “ “ 50 .....                                | 17 |
| “ “ “ “ 25 .....                                | 1  |
| Case withdrawn .....                            | 1  |
| Health permit revoked .....                     | 1  |
| Out on bail .....                               | 10 |
| Thirty days in penitentiary .....               | 1  |
| Discharged .....                                | 1  |
| Agreed to operate for \$40 .....                | 4  |
| Agreed to operate for \$10 .....                | 1  |
| Agreed to operate .....                         | 1  |
| Case dismissed .....                            | 2  |
| Case pending .....                              | 1  |
| No record .....                                 | 4  |
| Guilty .....                                    | 1  |
| Sentence pending .....                          | 1  |
| Test case .....                                 | 1  |
| Discharged .....                                | 1  |
| Not guilty .....                                | 1  |
| Suspended sentence .....                        | 1  |
| Sixty days in prison .....                      | 1  |
| Ten days in city prison, or \$100 fine .....    | 4  |
| Ten days in city prison, or \$250 fine .....    | 1  |
| Thirty days in city prison .....                | 1  |
| Under bond .....                                | 1  |
| Thirty days in jail, or \$250 (went to jail) .. | 1  |
| Thirty days in city prison, or \$75 .....       | 1  |
| Ten days in city prison, or \$50 .....          | 1  |
| Refused to operate .....                        | 1  |
| Vulgar, coarse woman, filthy apartment ....     | 1  |

That this work could have been carried to a much greater extent is witnessed by the number of complaints received at the office of the counsel and the secretary. At a conference with the Board of Health of New York City Dr. Haven Emerson inquired of me why it was that so few of the complaints forwarded to me had been investigated by the Society's Legal Bureau. I stated that it was due to a lack of funds, and that the complaints were so numerous and investigations so expensive that the Society had been absolutely unable to cope with the situation. That every effort had been made to enlist the services of the District Attorney and the Police Department without result, and that the Society could not expend the entire amount of funds available for the prosecution of illegal practitioners in this branch of the work, no matter how fully it realized the importance and necessity of the effort.

One of the requirements for the issuance of a license by the Board of Health of New York City is that a midwife shall have a clean bill of character in so far as charges of illegal practice or convictions are concerned. The futility

of this requirement is demonstrated by the statement above made, that there is no constituted authority whose duty it is to investigate the activities of the midwife in this nefarious business. It is a recognized fact that there are certain physicians who devote a large portion of their time to the induction of criminal abortion, and it is a sad and rather gruesome fact that in the annals of The Medical Society of the County of New York three physicians have been convicted and have served prison sentences, all three of whom were pardoned by Governor Dix the last day of his incumbency in office.

The knowledge of the midwife in relation to anatomy, surgical cleanliness and the dangers of abortion would make her a less dangerous factor to the mother and more destructive to child life than in former years.

In talking with the attending physician of one of the large hospitals in New York City, he stated that there were times that it was absolutely necessary to close the wards to incomplete abortion cases, practically all of which were done by midwives. The temptation to the physician, even with his higher moral standard, is great; what must it be to the midwife, who feels safe in her surgical procedure, and who is not hampered by a code of ethics, or a possible investigation. It is well to remember that in the practice of the criminal abortionist, whether a physician or midwife is the guilty party, it is only the occasional case that sees the light of day, leaving to the imagination the computation of the enormous number of pregnancies terminated for a financial consideration.

Another phase of the subject is the care of the patient during the pregnant state. It is granted that this is impossible for the midwife unless she is given the full power of the practicing physician. Today the skilled obstetrician hesitates to face the problem of delivery without a full knowledge of the patient, her functions and her measurements; yet the midwife, with no other knowledge than the ability to "deliver a baby," faces the same problem with infinitely less knowledge of medicine and no study of the patient. The frequency of post-delivery, retroversion and the other complications too numerous to even mention, preventable in a large measure by proper care, are again absolutely disregarded by the midwife.

Care of the child is most superficially considered, if at all. This is not said in criticism of the efforts of the Board of Health in any of the cities to look after the health and welfare of the child from birth up, but is a mere statement of fact in relation to the preparation of the midwife for her self-imposed task.

Let us consider for a moment the situation in a broad sense. Throughout the United States the midwife delivers approximately forty per cent of obstetrical cases. In New York City the

figures show that in 1914, 1,448 midwives were registered. During that period 140,647 births were reported, of which physicians delivered 87,650. The midwife delivered 52,997. In other words, to the care of midwives are delivered the health and future of over 100,000 lives a year. At a very conservative estimate, in ten years this would make an enormous total of one million women and children who trust their present and future health to her care. It is appalling to think of the number of cases in this enormous number who need the care of a skilled physician both before and after delivery. Statistics upon the subject are impossible from the very nature of the problem, but deducting one's conclusion from hospital and private practice experience, the number must be very large.

Still another side of the problem is the physician unskilled in obstetrical work. The statement has been made that the midwife gave her patient better care and had fewer post-partum infections, fewer sore eyes, and her results were generally better than many of the physicians who practice among the same class of patients. It is difficult to conceive how this statement could possibly be true, but granted its truth, it does not answer the question at all. The only method of getting at a full comprehension of the ultimate results would be to obtain a record of these patients for a long enough period after delivery to eliminate the later as well as the primary complications of labor. The work entailed would be so enormous as to be a practical impossibility. Again, granting that the midwife does give her patient practical care during her labor, that post-partum infections are rare, and complications, so far as the child, are eliminated by careful supervision, does this justify the placing in the hands of the midwife the right to practice medicine? Most emphatically NO. And again, does the fact that the overworked, poorly paid physician, working in the tenement district, has apparently poor results both as to immediate and secondary complications of delivery, excuse the profession, and the state, from giving to the pregnant woman that care to which she is entitled? Again most emphatically NO. The responsibility of the care of the birth of the nation is upon the profession of medicine, and New York State, and no avoidance of the issue will give the profession or the state immunity from the charge of neglect of its plain duty.

It has been stated on the bulletin of the Board of Health that a community may, within certain limits, regulate its own death rate. This I believe is true, and I am still further convinced that the first step in this direction is the proper care of the pregnant and parturient woman.

It is strictly unprofessional, if not criminal, to neglect so tremendous a duty so plainly placed

upon the profession and the state. The history of obstetrics is as old as the birth of the first child. The realization that there was such a science as gynecology is but fifty years old; therefore, in my opinion, all statistics, no matter how carefully compiled, are valueless except in a general way. One has but to do a few years of clinical gynecology to realize that there has been a great neglect chargeable to the physician.

The plea that I desire to place on record is a plea for better obstetrical care, not only to the rich but to the poorest of the poor, and again, not only to these two classes of cases, but to those who are neither rich nor poor, and who admittedly are least well cared for in their medical needs.

It is due to Dr. George W. Kosmak, whose experience in this field is large and extends over many years, that a committee was appointed by the State Society to look into this most vital of questions.

There are three plans suggested as a possible solution for the midwife question.

First, that of education through properly conducted schools for midwives, such as the Bellevue Hospital School in New York City. These schools could be made to graduate capable midwives, provided, of course, sufficient material for clinical study was available. The education should include the return at intervals of two or three years of the graduate of the institution for post-graduate instruction.

The second plan, as suggested by Dr. William E. Studdiford, the opening of a department in all the large lying-in hospitals for the practical and essential instruction of midwives. This would have many points of advantage from an economic and a practical standpoint. The objection made to it by the hospitals in question is that it would interfere with the work of their staff and students. It would seem, however, that this objection could be eliminated and a course of study given of not less than two years of the greatest practical value to the midwife both in the routine care of the woman during and after delivery, and the care of the child for the first two weeks.

These two plans deal with the midwife question in an effort to improve conditions existing at present and make for better work on the part of the midwife.

The third plan suggested by Dr. Kosmak is the elimination of the midwife by the development of the following solution of the trouble, namely, that there be created obstetrical clinics where patients should apply as soon as they discover that they are pregnant and receive care during the parturient state, both as to instruction in the care of themselves and hygiene. At these stations physicians could receive instruction

in the study of the pregnant woman, and become skilled in the art of measurements. These stations necessarily be open night and day and be under the charge of a nurse, who might be resident, or if the work were active enough there might be created a day and night service. Physicians skilled in obstetrics would be in attendance at one or more of these stations, who would have supervision of the general management of the station, and whose duty it would be to see that there were enough students of obstetrics to attend prospective confinement cases. The post-partum visit would be carried out by the nurse at the station, and the post-partum examination made by one of the physicians in charge. These stations might be run in conjunction with one of the lying-in hospitals, or might be developed as a supplement to the Board of Health.

It requires but a glance to see the enormous advantage to the profession in the education along obstetric lines of this plan of work. That such a plan would be well received by the people who most need it is witnessed by the fact that this branch of labor in hospitals, such as the Nursery and Child's and the New York Lying-In, have been most successful, and by the fact that 11,000 women are delivered annually in the hospitals. I believe that were this plan inaugurated, even at an expense to the state, the ultimate good to the profession and to the people would be so enormous in its economic saving that it would be more than repaid in a few years. It is the only logical solution of the midwife problem, and while it would probably take years in developing, would give to those most deserving it better obstetrical care, and to the profession education in obstetrics that would attract to this state serious-minded, hard-working physicians who desired to master the most important branch of medicine. In New York City alone a nucleus of over 50,000 obstetrical cases per year to draw from would be clinical material of the greatest value.

In closing, permit me to say that it is my belief that the midwife is indeed a relic of the barbaric past wherein the survival of the fittest seemed to demonstrate her right to violate the law, to give a most superficial and unscientific care to a most vital subject, and that eventually the light of education must eliminate her and the public realize that child-bearing, while a normal function, is capable of such variations that only the physician should be provided to deliver the patient who has had special education to enable him to recognize and meet any of the complications arising in the course of the case; at least, to have that skill whereby he can see danger ahead and be prepared before the damage is done.

Those of us who look back on thirty years of experience realize how inadequately a physician

was prepared for obstetrical work, but this does not in the least eliminate the responsibility for unpreparedness at present, and with the plan outlined and the enormous clinical material available, it is my belief that for the woman about to be delivered better obstetrical care would be obtainable.

**THE POSITION OF THE NEW YORK STATE DEPARTMENT OF HEALTH RELATIVE TO THE CONTROL OF MIDWIVES.\***

By **LINSLEY R. WILLIAMS, M.D.,**

Deputy Commissioner of Health,  
ALBANY, N. Y.

**T**HE midwife problem has been with us for years. Many physicians, without full appreciation or understanding of the problem, have consistently advocated the abolition of the midwife. In various foreign countries midwives have been taught the elements of midwifery and have been granted licenses and supervised so that they might be kept under control. The problem in England was met by the establishment of a central board of control, as is now a matter of general knowledge to those who have followed the various attempts to control midwives.

Realizing that this was a problem which had to be met, it was undertaken by the Department of Health of the City of New York in accordance with a special act of the Legislature, passed in 1907, granting power to the Board of Health in the City of New York to enact regulations for the licensing and supervision of midwives (Chap. 432, Laws 1907).

When the general amendments were made to the Public Health Law of the State of New York in 1913, the appointment of a Public Health Council was provided for, and this Council was granted power to enact regulations controlling the practice of midwifery. In accordance with this authority, the Public Health Council enacted Chapter IV of the Sanitary Code, which provides in substance as follows:

"That no person other than a duly licensed registered physician shall practice midwifery or be registered as a midwife until she shall have received a license to practice midwifery from the State Commissioner of Health. No midwife shall be registered with a local registrar of vital statistics unless she shall have received her license."

Qualifications which were established in October, 1914, and went into effect on November 16, 1914, required that any applicant up to the first day of January, 1915, who was not less than twenty-one years of age, could read and write, who was registered with the local registrar of vital statistics, and whose moral character was vouched for, would be licensed to practice midwifery.

In order to obtain a license after January 1,

1915, the Code required that the midwife be not less than twenty-one years of age, able to read and write, cleanly, and show constant evidence in general appearance of habits of cleanliness, and either to possess a diploma from a recognized school of midwives or have attended, under the instruction of a duly licensed and registered physician, not less than fifteen cases of labor, in regard to which she must present a written statement from the physician or physicians that she has received instruction in the fifteen cases, and must present the name and address and date of birth of each case. She must also present satisfactory evidence of her qualifications of good moral character.

When this chapter of the Sanitary Code went into effect there were 439 midwives registered with the various local registrars outside of the cities of New York and Rochester, which are exempted. Up to January 1st, under these minimum requirements, 238 midwives were licensed.

With the higher qualifications since January 1st, 88 midwives have been granted licenses, making a total of 326 midwives licensed up to and including April 15, 1915.

In order to determine the general character of the work performed by these midwives, four of the nurses of the State Department of Health have been more or less constantly at work since the 15th of December inspecting the work of the midwives outside of the cities of New York and Rochester, and ascertaining, as far as is practicable, all the facts in connection with their work. Of the 326 licensed midwives it is found that only 38 are American or British, 88 are Polish, 81 Italian, 63 German, 16 Slavish, 11 Austrian, and the rest scattered among the Hungarians, Finns, Swedes, Russians, etc. Of the total number, nearly half—134—speak English.

TABLE I.

*Nationality of Midwives.*

|                 |    |                |    |
|-----------------|----|----------------|----|
| Scotch .....    | 1  | Russian .....  | 5  |
| German .....    | 63 | Bohemian ..... | 2  |
| Polish .....    | 88 | Slavish .....  | 16 |
| Swiss .....     | 1  | American ..... | 8  |
| Hungarian ..... | 6  | Colored .....  | 1  |
| Italian .....   | 81 | Hebrew .....   | 3  |
| French .....    | 1  | Irish .....    | 2  |
| Finn .....      | 1  | English .....  | 30 |
| Swede .....     | 5  | Dutch .....    | 1  |
| Austrian .....  | 11 |                |    |

*Language Spoken.*

|                 |     |                  |   |
|-----------------|-----|------------------|---|
| English .....   | 134 | Hebrew .....     | 1 |
| German .....    | 37  | Lithuanian ..... | 4 |
| Polish .....    | 69  | Bohemian .....   | 4 |
| Italian .....   | 56  | Austrian .....   | 1 |
| French .....    | 3   | Swedish .....    | 3 |
| Hungarian ..... | 10  | Spanish .....    | 1 |
| Russian .....   | 5   | Dutch .....      | 1 |
| Slavish .....   | 22  |                  |   |

Two of them are trained nurses, 56 have re-

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.



ceived diplomas from various obstetrical schools, and 32 who have been granted licenses since the first of January, have had the qualification of fifteen cases under medical supervision, and 11 applications for licenses are pending.

It must be obvious that in order to begin any supervision over the midwives, it was first necessary to know where the midwives were. Fortunately, the new Vital Statistics Law, which became operative January 1, 1914, required that every midwife register her name and address with the registrar of vital statistics of the district in which she resided. By this method of registration it was found that 474 midwives were registered with registrars of vital statistics. This gave the department information as to the number of women who apparently were desirous of practicing midwifery.

There were received 593 applications from 46 different counties, and 326 licenses have been granted up to April 15, 1915, in 35 different counties, 84 in Erie, 68 in Westchester, 18 in Oneida, 14 in Schenectady, 14 in Albany, 12 in Nassau, 11 in Onondaga, 10 in Niagara, 10 in Dutchess, and the rest scattered in the various counties as shown in Table II.

TABLE II.

*Number to Whom License Has Been Granted.  
(By Counties.)*

|                   |    |                   |     |
|-------------------|----|-------------------|-----|
| Albany .....      | 14 | Onondaga .....    | 11  |
| Allegany .....    | 1  | Ontario .....     | 1   |
| Broome .....      | 8  | Orange .....      | 7   |
| Cattaraugus ..... | 1  | Orleans .....     | 3   |
| Cayuga .....      | 3  | Rensselaer .....  | 4   |
| Chautauqua .....  | 12 | Rockland .....    | 3   |
| Chemung .....     | 2  | St. Lawrence..... | 1   |
| Columbia .....    | 6  | Schenectady ..... | 14  |
| Delaware .....    | 1  | Suffolk .....     | 5   |
| Dutchess .....    | 10 | Sullivan .....    | 1   |
| Erie .....        | 84 | Tioga .....       | 3   |
| Franklin .....    | 2  | Ulster.....       | 1   |
| Herkimer .....    | 3  | Washington .....  | 1   |
| Jefferson .....   | 2  | Wayne .....       | 1   |
| Madison .....     | 3  | Westchester .. .  | 58  |
| Montgomery .....  | 6  | Wyoming .... .    | 4   |
| Nassau .....      | 12 |                   |     |
| Niagara .....     | 10 |                   | 326 |
| Oneida .....      | 18 |                   |     |

In enacting the Chapter on Midwives of the Sanitary Code, the Council had in mind similar waivers of examination as existed when physicians were first licensed and the waiver of examination of other professions when licenses have first been issued by the State Board of Regents. It was also considered essential that midwives should be granted a license, upon a minimum of requirement. As was expected, a large number of the midwives were found to be ignorant and did not wholly understand the requirements they were expected to fulfill in order to secure a license. In the majority of instances the applica-

tions for license were filled out by others. Many deferred making application for license until after January 1, 1915, when the requirements were higher than they were previous to November 16, 1914.

After January 1, 1915, the Code required that each midwife should have a diploma from a recognized school of midwives or should have personally attended fifteen cases of labor. Those who have interested themselves in the study of the midwife question, must fully realize that except for graduates of the Bellevue School of Midwives, New York City, but little actual training was given in any school in this state. Examinations held by the Board of Health of Rochester, and the Board of Examiners of Erie County, do, however, set a standard which is far higher than anything else that has been set in the state, and the recent action of the Board of Examiners in Syracuse has also raised the standard in that city.

The value of the foreign diploma is questionable, and there is no way of ascertaining whether or not such diplomas have any particular value, or are granted after any specified amount of teaching or experience. In instances where such diploma was not forthcoming and where the midwife could not give evidence with names, addresses and dates of birth of fifteen cases of labor in which she had been in attendance under a physician, in a statement signed by the physician, she was required to continue as a practical nurse under the direction of a physician until she had completed her fifteen cases.

Criticism has been made of this provision, by saying that midwives will falsify their record and can get almost any physician to sign such a statement. This is a sad commentary on the medical profession if this be a true statement.

The criticism is made that fifteen cases are too few, but this is far more practical experience than the average physician has had at graduation.

In the supervision of the midwives a series of rules and regulations were established by the Commissioner in accordance with the authority granted him by the Public Health Council, which rules and regulations are identical (with one or two exceptions) to those enacted by the Board of Health in New York City. These rules and regulations define chiefly the means to be taken in securing asepsis, the symptoms and conditions which may arise before, during and after labor which require the attendance of a physician. It has proven absolutely essential that nurses must be maintained either by local boards of health or by the State Department of Health for the supervision of these midwives. All the midwives who have made application for licenses have been examined by the nurses, their homes and outfits examined, and reports made thereon. In many instances, the home, midwife and her outfit are found to be meager and uncleanly, but every

effort has been made to improve these conditions rather than to at once revoke the license.

From an administrative standpoint it seems wiser to lead and instruct these midwives rather than to take away their license and to run the risk of their continuing to practice midwifery without a license. It is found that many of the midwives own their own homes and are fairly well to do. The majority of them are married and are assisted perhaps by their children or other members of the family in making out of certificates, which the midwife herself signs. This better class of women are cleanly, fairly competent, and get good results.

A second group are women who are older, who have been trained abroad, who speak little or no English, who live in comparative poverty, and who take care of a poorer class of women, receiving perhaps five dollars for a confinement.

There is a third class of midwives who have received some education, who are young, more intelligent, and of whom it has been learned that they have made examinations for pregnancy, that they have had instruments in their possession and drugs of various kinds for treatment and possibly for the induction of abortion. In investigating this class of midwife the nurses have confiscated the drugs and the instruments and have warned them that they should not have them in their possession and that if found again in their possession the license would be revoked and further action taken.

It is found that in some instances physicians have trained women to assist them in caring for obstetrical cases, and that after a time these women have become midwives themselves. These midwives continue to ask the physician to assist them in difficult cases, and the physician refers to the midwife cases which he does not feel that he can afford to take care of. This is to the apparent mutual advantage of both physician and midwife.

Contrary to our expectation, it has been found that in comparatively few instances does the midwife perform the household duties of the patient, and in some instances does not even care for the baby. Only the poorer class of midwife does this.

All the midwives are required to keep on hand the silver nitrate solution prepared and furnished them free by the State Department of Health, and as far as can be learned most of them are using it regularly.

After four months of work, upon revisiting a number of midwives they say that they send for a physician for difficult cases, where four months ago they claimed to be proficient enough not to have to send for a physician. Many of the younger and better class midwives are giving up the practice of midwifery and are working as practical nurses, doing maternity nursing by the day for physicians and assisting physicians in obstetrical cases.

It is found that a number of the midwives cannot use a thermometer, although they are learning to do so. In a small number of instances, it has been found that the midwife is comparatively incompetent, not very cleanly and not well informed, but is the only woman in her district who is willing to assist in confinements in families where a physician refuses to go. In one instance recently, a midwife to whom a license had been refused, wrote in and stated that she had recently had two calls which she had refused where the expectant mother was not able to receive any assistance whatsoever, the patients being so many miles away from a physician that a physician's services would cost more than the patient could legitimately afford to pay. In this particular case investigation proved the facts to be true, and although the midwife did not seem to be a desirable one, license was granted with the hope that she would improve.

It has been found in a few centers of foreign population there were foreign midwives who could neither read nor write and whose services were practically necessary for these poor foreigners. In consequence of this fact, the Council amended the Code providing that in cases of midwives of foreign birth, who were unable to read and write, and upon investigation of the case and recommendation by the Commissioner of Health, the Council might waive this requirement. The Council has waived this qualification in 13 instances and 10 cases are pending.

It is the desire of the department to continue the supervision of the midwives at present licensed, to continue to license new midwives for the rest of the year in accordance with the present method, to continually supervise and educate the midwives, to weed out those who are absolutely incompetent, to keep closer supervision over those who do not promptly report births, and who have cases of sepsis, and to try and generally improve the practice of the midwives.

The department notes with regret that the legislature has only appropriated a sufficient sum of money for four supervising nurses, which will, to a certain extent, curtail the work of the supervision of midwives. At the recent session of the legislature a bill was introduced which required that the Sanitary Code should not have the force and effect of law until it had been approved by the legislature. This bill was introduced at such a late period of the session that it was impossible even to consider the enactment of the Sanitary Code into the Public Health Law of the state by the legislature, so that its passage would have entirely abrogated the Sanitary Code until the next session of the legislature. The department felt it absolutely essential to the usefulness of the State Department of Health to defeat this measure and noted with regret that the Legislative Committee of the State Medical Society urged the passage of this bill, which would have entirely repealed the Sanitary Code. If this bill had be-

come a law, the power of the Council to enact regulations controlling the practice of midwives would have been taken away and the work of the supervision of midwives entirely discontinued, at least until the next session of the legislature.

From an ideal standpoint possibly it would be better to abolish the midwife, but at the present time we have, outside of the City of New York, 326 midwives who are reporting perhaps almost one-quarter of the births, and to abolish them generally would mean, in the majority of instances, one of two things—either that the midwives would continue to practice without a license, or the patients would not be able to receive any assistance whatsoever during the period of childbirth.

#### *Discussion.*

DR. GEORGE W. KOSMAK, M.D., New York City: It has been remarked that on every occasion on which the so-called "midwife problem" comes up for discussion practically the same people will be found taking part in the same. This must be regarded as rather unfortunate and it would be very much better if the entire medical profession would show a more determined interest in this matter. We must regard the midwife question from a number of viewpoints. Medical practice at the present time has been invaded by numerous outside influences. Such bodies have relegated unto themselves a particular field for the practice of their cults and have become sufficiently organized in numerous instances to demand of state legislatures a license to practice unmolested the particular division of medicine to which their activities apply. Thus within recent years the optometrists have invaded the field of the legitimate medical practitioner who has given years of study to the eye and its ailments; the osteopathist finds in the spinal column the source of every evil and has practically persuaded our legislators that he is entitled to practice in every field of medicine by the exercise of this procedure; the neuropathist, the Christian Scientist, the chiropractors, and others too numerous to mention, have organized themselves in order to assail legitimate medical practice. In attempting to license and regulate the practice of midwifery by individuals who have not had any medical training in the accepted modern sense, are we not ourselves extending the ranks of the irregular practitioners and favoring the invasion of the legitimate field of medicine? Much can undoubtedly be said to justify the existence of the midwife, and reference is frequently made to foreign conditions as a basis for the regulation of our own. Thus, the German system is frequently referred to, but a moment's thought to what the conditions in Germany actually are will convince the casual observer that this is impossible. In Germany the respect for law and order becomes almost a prenatal influence, and the careful supervision of the midwife by the state can never,

from the nature of things, be duplicated in our own country. To one who has been on the field the duplication of the exceedingly well-managed German system must be admitted as impossible under our own form of government. In Germany and other countries in Europe midwives are educated in public hospitals and practically remain public servants, not as with us simply under a more or less deficient public supervision. That even under this highly developed system a great deal of dissatisfaction exists among the members of the medical profession will become evident to anyone who converses with the German practitioner. I have been repeatedly told that they wonder why we should attempt to introduce any such method in our own country although recognizing the effect of a custom that goes back through the centuries. In Germany of today there is certainly more obstetrics done by the medical practitioner and less by the midwife than formerly. The dangers and limitations of the midwife are acknowledged to such a degree that these women are compelled to return for post-graduate courses at regular intervals. Their supervision is not limited to their technical equipment but their mental qualifications are likewise kept under guard. So even the Germans admit that the educated midwife is not a safe institution and they have provided public salaried physicians who must be called upon in case of necessity. I would simply ask can we ever bring about such a condition in this country?

Notwithstanding the good work of the New York City Department of Health in this field and the attempted duplication of its efforts by the State Board of Health, such inspection and supervision leaves much to be desired. Undoubtedly the inferior class of midwives will be eliminated, but in view of the lack of teaching facilities can we ever hope to supply a desired number of so-called educated midwives?

The Board of Health of New York recognizes but one school that fulfills its qualifications, and from a careful inspection of their requirements and examination papers I personally fail to see how any but a very small number of women who might enter this field could ever properly qualify. Moreover, a woman who graduates from a school of this kind considers herself, from the very nature of things, as well qualified to practice obstetrics as the medical practitioner, and the first thing she does is to make a scale of fees in which she competes directly with the doctor practicing in the neighborhood. Moreover, the claim that she acts as a nurse to the mother is all nonsense, as far as my personal experience goes. A midwife of this type makes her post-partum calls just as a doctor would and pays no further attention to her patient. She leaves this to one of her sisters who has failed to come up to the desired requirements of the local board of health and

finds herself compelled to step down to a lower plane.

Referring again to the fact that insufficient facilities are provided for the training of midwives, it has been suggested that the lying-in hospitals open their doors for the instruction of such women after the fashion of foreign institutions. Personally I would decidedly object to a proposition of this kind, as we require all our clinical materials in the hospitals for the instruction of the staff and the students who come from the medical schools to take this as part of their practical training. Our American nurses, moreover, would never accustom themselves to working in the same harness with a personage who cannot be regarded as a qualified practitioner of medicine.

To one who opposes the midwife system *per se*, the question is often asked: what do you offer as a substitute? A number of very valuable suggestions have been made which fully cover this point and there is not time to dilate on the matter in this discussion. The solution, in my own estimation, cannot be reached by any attempt to introduce into this country the so-called educated midwife. From the very nature of her surroundings she will not prove a success. However, the conditions at present existing cannot be revolutionized, they must be submitted to a process of evolution and this must depend on a change in the economic surroundings of the patients and a better education of mothers as to the importance of proper obstetric care. Until that millennium has been reached we must content ourselves by gradually eliminating the practice of the midwife as much as possible. This the State Board of Health, by means of its new regulations, may succeed in doing. If so, the organization must be congratulated. The development of substitute agencies is the most essential factor in the elimination of the midwife, and the element of competition will do more to eliminate their practice than anything else.

DR. GEORGE W. GOLER, Health Officer of the City of Rochester: In 1895, the Board of Examiners in Midwifery was appointed, consisting of three members, two of them physicians, who, together with the health officer, should constitute such board. The compensation of the members of the board has not exceeded \$80 per annum for the two members other than the health officer, who serves without compensation.

The board is required to examine and license midwives; any of whom found qualified shall be licensed upon the payment of \$10. These midwives so licensed shall practice midwifery in cases of normal labor only and no others, and shall not use instruments nor assist in labor by artificial, forcible or mechanical means, nor perform version, nor attempt to remove adherent placenta or attempt the treatment of disease.

The foregoing statement is a summary of the law as it relates to Rochester. This law was passed as a result of the labors of Dr. N. W. Soble, one of the original members of the board, who, with Dr. W. S. Rambo and the health officer, *ex-officio*, were made the Board of Midwifery Examiners and have served for twenty years. Prior to the time when the Board of Midwifery Examiners of Rochester was constituted, there were 30 or 40 midwives practicing, and they attended more than one-third of the reported births. Today there are nine midwives practicing and they attended last year 18 per cent of the reported births. In the past fifteen years but three or four new midwives have been admitted to practice. Any midwife able to pass the examination of the Rochester board must show theoretically that she is as capable as a third-year medical student in obstetrics, and she must also show that she has had vastly greater practical experience. Midwives must pass examination in English.

The whole midwife problem in America is an attempt to engraft an old continental custom upon the people of the United States. We do not want midwives. The mothers of our children ought not to have midwives. We do want better trained physician obstetricians, whose duty it shall be to protect the mother, both before and during, as well as after, the birth of her child.

DR. P. W. VAN PEYMA, Buffalo: As a member of the Board of Examiners in Midwifery for Erie County during the last twenty-five years, and from about forty years of experience in practical work with them, I am clearly of the opinion that midwives have a field of usefulness. While many are still careless, yet many, also, are cleanly, intelligent and conscientious. The condition would not be improved by turning their practice into the hands of such medical men as could be expected to do the work. The essential difference between a midwife and a physician is that the latter are free to hasten delivery by means of forceps, version, etc. This, in my experience, results in more serious consequences than the shortcomings of midwives.

No community will have good obstetric practice that does not learn to adequately recompense the attendant for time and skill. Time is an element of first importance in labor, and the midwife is more inclined to give this than is the average underpaid physician.

My remarks touching Cesarean section were somewhat as follows:

We have heard much about the technique of Cesarean section and very little about the indications for the operation. The latter interests me more. In placenta prævia a fundamental distinction must be observed between the practically central variety and those where only a small portion of the placenta overlaps the cervix. The essential points to be observed are how much

placenta must necessarily be out of function and for how long a time, also how much hemorrhage is unavoidable. In a practically central placenta prævia, especially in a primipara, Cesarean section will often be the operation of choice. In the lateral varieties, where but a small portion of placenta is out of function and in which type the hemorrhage is easily controlled, Cesarean section is not at all indicated. Various methods of treatment, such as rupture of the membranes, and by pressure on fundus or by traction with forceps, bringing the presenting part to engage and to occlude the cervix and thus compress the bleeding placenta, give good results both to mother and child. In multipara, with quickly dilatable cervix, manual dilatation, introduction of the hand on the side where there is least placenta and version and extraction is also very successful in these cases.

The present wave of operative interferences is disastrous. The writer has delivered naturally several children in cases where Cesarean section had been previously done for supposed disproportion of child and pelvis. Quite recently, in this city, two women delivered themselves while the surgeons were scrubbing up preparatory to Cesarean section.

DR. N. KAVINOKY, Buffalo: The midwife question is not only an administrative and medical one but to a greater extent an economic one. The rich woman gets good obstetrical care of a specialist for good money. A part of the very poor women get the same good help in well-established maternity institutions or general hospitals—as charity. The majority of women are not in position to pay the fee of a special obstetrician, nor do they want to be attended for nothing; they are not paupers and they hate and distrust charity. Those who are doing special work are not accessible to them. Even the young physician, who takes obstetrics as a specialty, will not go to the needy districts; he prefers to wait in comparative idleness for a few years until he picks up a more fashionable practice with high fees. Thus these great masses of women are dependent upon the midwife and the busy and often unskilled general practitioner. The work of both is often unsatisfactory, and sometimes disastrous to the life or health of both mother and child.

Will the abolishing of midwives improve this situation? I am sure that if this should become a fact under the existing conditions, a considerable number of women, who are now taken care of by midwives, would be taken care of by plain women with no training or license (such as relatives and neighbors). Many of the pregnant women (especially Polish) do not see a physician or a midwife before labor. They call for help when labor starts and then it is often impossible to get the attendance of a physician, especially if it happen at night.

One more point I would like to bring up. The

bad obstetrical work that is being done by the midwife can be diminished to a more or less considerable degree by strict supervision of the health authorities with the assistance of the medical profession. Fear of losing her license or having the same suspended will force the midwife to be more cautious in her work. Can anything or anyone interfere with the activities of a medical man, if he is unskilled in obstetrics and inclined to do hasty work?

DR. W. MORTIMER BROWN, Rochester: In dealing with the question of the midwife, it seems to me that we have been going at it in the wrong way. Instead of trying to legislate and regulate her out of existence I think that we should in a measure forget her, and devote the energy we would expend on her elimination to some constructive effort to build up something to take her place.

At the present time she occupies a place in our social structure which we as a profession have been unwilling or unable to fill. My feeling is that we cannot expect to arbitrarily eradicate her from the community and put nothing in her place.

If we will systematically work to build up a system of care for the poor and ignorant mothers by the means of prenatal or advisory obstetrical clinics, social service work, and the various welfare activities, we will have an educational factor that will do more to remove this evil than any other, that will serve to place the abnormal cases under proper care at once and will ultimately develop some means of caring for the mass of ordinary cases.

#### THE EVOLUTION AND TREATMENT OF HYPERTHYROIDISM IN ITS MILD TYPES.\*

By HARLOW BROOKS, M.D.,  
NEW YORK CITY.

EVERY physician knows that tachycardia exophthalmus, goitre and tremor are the cardinal symptoms of hyperthyroidism and that when found together they constitute a very definite and unmistakable disease picture. I wish, however, to discuss with you not the well marked and fully developed case of exophthalmic goitre but those usually obscure and incomplete types of hyperthyroidism which in my opinion are more numerous and far more important, especially from the standpoint of medical treatment.

That many cases of exophthalmic goitre do not exhibit all the classical symptoms is, of course, obvious, thus some fail to present goitre, others the exophthalmus, etc. These symptomatic discrepancies are naturally especially evident in mild or incompletely developed instances and in the relatively early stages of the disease, many

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or most of the characteristic signs and symptoms may be entirely wanting so that absolute diagnosis is impossible. It is, however, in these very cases that treatment is most advantageous and successful.

Onset is commonly more or less slow, though not infrequently as in frank Graves' disease, cases appear to have a sudden onset as from a nervous shock, a fright or from some traumatic condition. Close analysis of such instances, however, shows almost without exception a long-standing predisposition and instead of really being sudden in onset a tendency toward hyperthyroidism had long existed. True exophthalmic goitre rarely develops before the sixteenth year, but we constantly see children and especially young girls showing definite traits of mild hyperthyroidism before this age, particularly at about the period of menstrual establishment.

Treatment in these very early stages of the disturbance is usually very successful and as a result the grave problems involved in the management of a fully developed case may never arise; hence the importance of recognizing and treating such types at their beginning. At the very outset these cases can hardly be classified as disease pictures, but rather as aberrations or exaggerations of the physiological.

It is well for us to then briefly review the physiological effects of thyroid secretion before we go on to the discussion of the pathological manifestations which develop as a result of hypersecretion.

Enlargement of the thyroid gland takes place in early girlhood particularly at that time when the menstrual functions are about to appear, when the mammary glands are undergoing rapid development and when at the same time the fancies, the affections, the passions and the "temperament" of a young woman are in rapid process of establishment. Precisely similar though less striking changes appear in boys. By no means infrequently the enlargement of the thyroid at this period and the consequent sensations of swelling and neck disturbance which it causes give rise to the diagnosis of a globus hystericus. As Solis Cohen has pointed out, especially at this period of life the nervous excitability and the tremors which appear as the result of the hyperthyroidism are also often mistaken for evidences of hysteria, whatever we may mean by that indefinite term.

One cannot consider these signs and symptoms as pathological in type except as to degree, for we know how dependent the development of the sexual apparatus is upon thyroid activity, not only the physical development but the psychic evolution as well. Although this fact has been very definitely shown by physiological study, it is perhaps most impressively demonstrated to clinicians by the conditions

which eventuate where the thyroid secretion is defective.

Cretinism and myxœdema are, of course, extreme degrees; both are characterized by retrogression or by lack of progression in physical and psychic growth. The cretin is a dwarf of undeveloped mentality. The myxœdematous patient becomes physically defective and mentally incompetent, entirely unable to think in an original manner. The physiological secretion of the thyroid in adolescence indexes mental and physical activity and growth. Charm of personality and the mental and physical differentiation of the sexes occurs very largely under, and as a direct result of thyroid secretion. Any physiological process is very likely to be overdone, to exceed in degree, though not necessarily in a purely qualitative way. Many disease processes undoubtedly originate in this manner but in none is the result of overfunction more impressively shown than in overly active thyroid secretion. This is in its physiological intent, normal, but in its effect, "too much of a good thing."

Normal cleverness and responsiveness become exaggerated into precocity and petulance, and active and deft muscle and nerve response become ataxia or tremor, bright and sparkling eyes are transformed into an exophthalmus. Normal sex differentiation is transmuted into hysteria, preversions and "nervousness," the mental processes of normal activity become the irresponsible vaporings of the neurotic; these are in many cases but the mental signs of an early hyperthyroidism, although we are as yet entirely unable to completely disassociate such conditions from disturbances of associated gland secretion.

This state is by no means manifested by purely mental symptoms any more so than a fully developed exophthalmic goitre, for with an overly active thyroidism occurs overly or early differentiation of the physical sex characteristics, the growth of pubic hair, the development of the figure, of the mammxæ and in boys an early change of voice. Many of these characteristics are likely to escape the observation of the physician who does not know what he is looking for and the case may be pronounced one of "nervous heart," "hysteria," "laziness," "preversion" and so on.

For some time such cases have been properly classified under the heading of "Formes Frustes" or of undeveloped exophthalmic goitre, though admittedly many such patients, even untreated, would never develop true Graves' disease. A very well-known surgeon in discussing these patients, recently said that if they were submitted at once to thyroid surgery, 100 per cent of cures could be effected. Of course, this operator does not advocate thyroidectomy in every case but probably advises in most instances such minor steps as vein or artery ligation. I

have no doubt whatever but that he might realize his 100 per cent of cures, that is, that no exophthalmic goitre would follow operation, although more or less myxœdema might. As a matter of fact, nature cures for and cures these cases in the average instance. In my experience these are very instances in which nature is a more wise physician than the surgeon, and in my observation where physicians are able to carefully and especially individually study these cases, brilliant results may be confidently expected more definitely without rather than with the assistance of surgery.

In a condition in which mental and nervous factors loom so large, it is obvious that the psychic or nervous management is very important. Many school physicians and intelligent parents are beginning to grasp this fact and the precocious child is held back from her studies, the neurotically inclined boy is put out into the open and given occupations which tax not his higher but his more primitive resources. He is sent to the farm, to the boys' camp or to the occupational school; instead of too many books and too much music, the little girl should be given routine household duties, taught to cook, to sew and mend, to use her hands instead of her head. She is sent into the open in preference to the class room. Theatres and parties are to be replaced by tennis and horseback riding and by all manner of other interesting, absorbing, yet primitive, simple and healthful occupations. Such a régime of mental supervision, treatment if you like, does more to quiet down the heart action, to check the outbursts of temper, or temperament, if you please, for they are oftentimes the same thing, than all manner of radical surgical procedures may.

The selection of a proper school is a very weighty matter in these cases and in this regard the question of whether the child should be sent away to school or retained at home is often most important. In cases where home conditions are salutary, it seems better to have the child attend a school which permits its return each night; such a course presupposes a home surrounding of quiet and order with parents of even temper and judicial calm. It demands a school in which the spirit of competition is subordinated and in which, insofar as possible, an attitude of privilege and pleasure is thrown about instruction.

Although I am not in general in favor of religious schools I believe that for many children suffering from this tendency to hyperthyroidism, the religious schools with their attitude of trust in Omnipotence with the devotional exercises, which form as it were an outlet for the sentimental and passionate side of many natures, are of very definite medical desirability. Such institutions are far less frequent in this country than in Europe and I refer particularly

to many Sisters' schools especially in France, Belgium and Southern Germany. The entire absence of flirtatious escapades in such institutions aids to very materially subordinate the growth of the sexual instincts. It is doubtless true as the phychanalists assert that religious devotion and fervor in not infrequent cases supplants or typifies the sexual.

On the other hand, cases exist in which the routine of religious exercises irk and irritate to the point of almost terror. I have at present under my care a splendid boy whom the routine ritual of a very high church school had driven into a hysterical condition. He had suffered but very slightly from his hyperthyroidism until his position in the social life of the school necessitated his taking a prominent part in the devotional exercises which had been at all times most distasteful to him.

With a mental viewpoint already precocious from hyperthyroidism, the reading and the associates must be carefully selected for this is a period of temperamental hyperæsthesia and precocious development particularly of the sexual mechanism and instinct.

The physical aspects of the case must not be forgotten. With a naturally irritable and over-acting heart, exercise must be so adjusted that no excessive strain is placed on the circulation. Though the growth of the body in these patients may be excessively rapid, we must remember that size does not mean resistance and that young tissue, be it gland or muscle, must not be called upon to do the work of an adult. Boys with this condition should not be allowed the great strain of football or of the boat crew; girls whose size and alertness makes them tempting material for the basketball team must not be allowed to overexert with their rapidly growing, yet immature, tissues.

As I have intimated, the hygienic and mental management of these cases is more important than the medical, though the family doctor may only realize the extent to which his well-tempered advice enters into the social control and real cure of these important cases.

Medicinal treatment must not be neglected, and while the crux of my paper has been to emphasize the therapeutic necessity of training and of the psychic side of the treatment, ordinary medical methods are by no means meant to be subordinated.

Anæmia is a condition associated in these cases in a very large number of instances. This is, of course, particularly true of chlorotic girls, many of whom present very marked symptoms of hyperthyroidism. In fact anæmia of whatever origin predisposes toward the tachycardia and irritable heart which play so prominent a part in this condition. Iron must be used in nearly every case, if not continuously then sporadically. In some instances, iron-rich food,

occasionally abundant meat, but more commonly green vegetables are satisfactory. Egg yolks as such or given in other foods as in custards or perhaps beaten up in milk, are a form of iron quickly absorbed and willingly taken. Similarly the organic irons or combinations of iron with peptons may be advisedly selected. In the average case, however, the old-fashioned tincture of the chloride, Basham's Mixture, or the syrup of the iodide of iron are most useful. In a considerable class of cases hyperthyroidism seems to be associated with chorea, commonly in one of its milder types. In such instances, of course, arsenic acts very beneficially.

All workers in this class of disease have recognized the importance of the digestive disorders in these cases. Not at all infrequently we see cases in which constipation or various types of digestive defects seem to bear an important role, if not in the causation, then in the excitation of the condition. In most instances these digestive disorders are more readily corrected by dieting methods than by medical means alone.

Attempts to slow the tumultuous heart action which forms so prominent a part in fully developed exophthalmic goitre demands in these cases, in my opinion, a quite different line of treatment. In fully developed goitre, I, in common with most therapists, rely very largely on the digitalis group of drugs, a method the value of which I think in adult cases admits of little questioning. I believe its use to be commonly unwise in these early and undeveloped cases.

Instead of by drug stimulation, I believe that cases of mild hyperthyroidism are much more certainly and beneficially treated with sedatives and especially by the mechanical methods already suggested. The bromides, however, act with very definite benefit in many patients and of the various forms of them, I have received the most certain benefit from the bromide of strontium though the salts of sodium and potassium are also efficient. In appropriate cases the use of the ice bag over the precordium brings about the desired effect, but physical and mental rest are above all other methods the most certain to benefit.

Finally treatment in each instance must be long continued and must be sustained at least in the way of general supervision of the case for months or years, usually until the child has passed to the adult when in case a normal life is possible, complete cure is likely to become firmly established. It is my belief that most cases recover practically spontaneously, though they may suffer throughout life from more or less thyroid instability. The important matter appears to be early recognition and persistent supervision.

## CLINICAL OBSERVATIONS OF CASES OF DYSTHYROIDISM.\*

By JOHN M. SWAN, M.D.,

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THE majority of papers that have been published concerning the disease variously known as exophthalmic goitre, Graves' disease, Basedow's disease and hyperthyroidism has been based upon the conception of Möbius that it was the result of the over-production of thyroid secretion by an hypertrophied gland. This theory has satisfied clinicians, with some few exceptions, up to the present time. Recently, however, there has been some question as to its applicability to all cases. It is conceivable, of course, that the thyroid body may hypertrophy in order to produce an excessive amount of normal secretion, so that the total quantity of the active constituent of the secretion is above normal. It is also possible to conceive of an hypertrophied gland producing a greater quantity of secretion, the active content of which is below its normal percentage, so that the total quantity of active content available for the needs of the system shall be as nearly normal as possible. The active ingredient of the thyroid secretion is conceded by all observers to be iodine in organic combination with proteid material. Examination of thyroid glands removed by surgical measures for the relief of the symptoms of hyperthyroidism have shown that the iodine content is quite variable. The majority of glands, however, contain less iodine than normal per gram weight of dried gland substance. This has been shown by Smith and Broders,<sup>14</sup> at Rochester, Minnesota, and by Marine and Lenhart,<sup>12</sup> at Cleveland, among others. The latter authors found, upon the determination of the iodine content of 69 glands removed at the Lakeside Hospital, in three years, that it was below normal in 51 cases, about normal in 11 and above normal in 7. Apparently then, the majority of cases of hyperthyroidism that come to operation, at all events in those parts of the Great Lakes Basin of the United States in which the above observations were made, have an iodine content below normal and it would seem safe to conclude that at least in that part of this region in which the work of Smith and Broders and of Marine and Lenhart was done the disease is not uniformly due to the over production of a normal secretion by an hypertrophied gland.

McCarrison<sup>11</sup> holds the view that goitre is due to the presence of a living organism in the intestinal tract and that the hypertrophy of the thyroid body is the result of the stimulus of toxic material absorbed from the alimentary tract. McCarrison's studies were made in India. Many of his patients presented amebic infection. He succeeded in isolating a spore-bearing, aerobic

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bacillus from the intestinal tract with which he claims to have succeeded in producing goitre in goats. He has also treated cases of goitre, with beneficial results, with vaccines made from this bacillus, from a colon-like bacillus and from a staphylococcus. He has also said that goitre could be prevented by supplying the people in a goitrous district with chemically and bacteriologically pure water. His hypothesis claims that the thyroid body hypertrophies as the result of a definite stimulus and that the enlargement is not evidence of deranged function; but of its effort to resist some toxic agency. He thinks that the nervous and other degenerative changes which occur in the disease are the result of thyroid incompetency due to the action of these poisonous substances. These poisons on account of the functional imperfection of the thyroid gland are allowed free play in the unprotected portions of the body, so that tetany, cretinism and myxedema result.

Farrant<sup>3</sup> has stated that endemic goitre is caused by the toxins of atypical forms of colon bacilli. The mutants, according to this author, are usually conveyed by water, become indigenous in the intestine, and may be cultivated from the feces. These organisms produce a toxemia, which stimulates the thyroid body, produces a colloid hyperplasia and, eventually, an enlargement of the gland. He claims that the whole process may be imitated in the laboratory and that goitre can be produced in guinea pigs by feeding them with small doses of the organisms.

Wilms<sup>15</sup> claims to have produced goitre in rats by causing them to drink water coming from goitrous springs. He thinks that the poisonous material which produces goitre formation originates from decomposed animal material which is dissolved in the water.

Gilbride<sup>5</sup> hoped to be able to show that goitre was due to an infection. In my laboratory at the Philadelphia Polyclinic, in 1909 and 1910, he undertook a bacteriological study of fourteen glands removed at operation. Six of these glands were from cases of exophthalmic goitre and eight were from cases of cystic goitre. He obtained a growth of micrococcus tetragenus from one of the cases of exophthalmic goitre and a growth of streptococcus from one of the cases of cystic goitre.

If hypertrophy were due to bacterial infection of human fecal origin, particularly if the organisms were atypical colon strains, such as those described by Farrant, or spore-bearers, such as those described by McCarrison, hyperthyroidism would be a common disease all over the world. The contrary is true. It is well known that, except for occasional cases which are found in every latitude, the greatest proportion of cases is found in certain regions, such as the Swiss Alps and the Great Lakes Basin of America.

The infectious character of the disease would seem to be indicated by the fact that typical exophthalmic goitre has been produced in dogs by the injection of the juice expressed from a freshly removed thyroid gland from a case of exophthalmic goitre by Klose<sup>8</sup> and by Kocher.<sup>9</sup> On the other hand, the fact that iodothyryn (Kocher) and potassium iodide injected intravenously (Klose) will produce exophthalmic goitre in dogs is not consistent with an infectious etiology.

It seems to me that the striking clinical features of exophthalmic goitre are: (1) The number of cases in which there is a family history of carcinoma, nephritis, heart disease and tuberculosis. (2) The frequency with which the milder forms of the acute infections, bronchitis, tonsillitis, laryngitis, influenza, coryza and the like, have occurred in patients with clinical manifestations of hyperthyroidism. (3) The variable symptomatology, in addition to the cardinal symptoms of the disease; tachycardia, exophthalmos, struma and tremor. (4) The frequency with which such complications as spinal curvature, high palatine arch and other degenerative manifestations are seen.

It is quite understandable that the children of a diabetic father and a diabetic mother, who also had carcinoma; that the children of an alcoholic father and a atherosclerotic mother; and the children of a tuberculous father and a nephritic mother should present degenerative changes in their make-up, so that the stress and strain of life would affect them more seriously than it would affect the offspring of parents without such diseases. The argument may be advanced that the diseases mentioned occur in the parents late in life and that a family history of the four types suggested is quite common in all parts of the world. My thought is only that the children of such parents are started in life with a constitution below par and with the passing years various disturbances that, in a person of better heredity, would have been reacted from are followed by the development of such a disorder as that which we are considering.

In relation to the frequency of the acute infections, the question arises as to whether the thyroid disturbance reduces the natural resistance of the patient so that acute infectious diseases are of more frequent occurrence and of greater severity when they do occur, or whether repeated attacks of acute infection produce the thyroid disturbance from toxic influence. I am inclined at present to take the former view.

Tachycardia is the most frequent of the cardinal symptoms of the disease, although in the cases that I have studied, I have been able to satisfy myself of the existence of an enlargement of the thyroid gland in the majority. Perhaps, however, this is because I am looking for it, and it is quite likely that others examining

the same patients would fail to record the existence of a goitre.

Krecke<sup>10</sup> has made the statement that objective tachycardia is a pathognomonic symptom of exophthalmic goitre and Barker<sup>1</sup> says: "Whenever the pulse rate stays continually above 80 when the patient is lying in bed, I always suspect the possibility of hyperthyroidism." Of course, this statement applies to patients who are not suffering from a febrile disturbance.

I have found that patients, in whom I have made a diagnosis of hyperthyroidism, frequently complain of subjective palpitation when at the time of the examination the pulse rate is quite normal.

Although the size of the heart in these cases appears to be increased, as determined by percussion, examination of that organ by the X-rays shows that this apparent hypertrophy does not exist. Bauer and Helm<sup>2</sup> have made a study of the heart in goitre by means of the fluoroscopic screen and the orthodiagraph. They have found (1) a rather blunt apex; (2) an increase in the curvature of the middle portion of the left border of the heart with increased pulsation (pulmonary artery); (3) high position of the aortic shadow, which at the same time is narrower than normal. They have found that the transverse diameter of the cardiac shadow is not increased beyond the normal, as a rule. They interpret the narrowness and the high position of the aortic shadow as signs of hypoplasia of the vascular apparatus: a degenerative condition.

In the diagnosis of the condition I lay great stress upon the eye-signs. Many nervous patients present Dalrymple's sign or Stelwag's sign when talking and investigation of such patients will often reveal slight enlargement of the thyroid body, usually with a bruit, and a rapid pulse; at any rate a pulse rate above 80. It has long been known that exophthalmos may be absent. If obscure cases of nervousness, restlessness, irritability, nervous dyspepsia, nervous diarrhea, loss of weight, emaciation, headaches, thermal sensations, excess of perspiration and muscular pains commonly thought to be due to rheumatism or neuritis are studied from the point of view of thyroid gland disorder they frequently can be better understood than if a study from this point of view is omitted. The patients have various digestive, nervous and vasomotor symptoms which often lead to diagnosis of appendicitis, gastric ulcer, gallstones, and uterine disturbances and often to operations which appear to the internist unnecessary.

Kahane<sup>7</sup> says: "The manifold manifestations of hyperthyroidism become more distinct and understandable when we disabuse our minds completely of the abstract notion of Basedow's disease. The same reasoning applies also to the other extreme, myxedema. It is possible for the

thyroid to functionate to excess and then defectively in succession."

I am inclined at the present time to look upon hyperthyroidism as a disease of metabolism characterized by tachycardia and associated, with varying frequency, with exophthalmos, struma, nervousness, tremor and other system disturbances. The metabolic disturbance that is responsible for the disease appears to be connected in some way with iodine chemistry. The disease is chronic and shows acute exacerbations from time to time. The pathologic changes in the thyroid gland may be hyperplastic, colloid degenerative, fibrotic and hypoplastic (Marine and Lenhart). All three stages may be seen in the same gland. The acute exacerbations are usually associated with hyperplastic changes. When the disease becomes quiescent colloid degeneration has occurred. When the fibrotic and hypoplastic stage appears the symptoms ordinarily known as hypothyroidism develop.

The usual train of events in this disease may be theoretically outlined somewhat as follows: An individual has been sickly during childhood, or, if not sickly, has been delicate, perhaps anemic and easily the victim of infectious diseases. Indeed, when the infections develop he is perhaps sicker than others of his acquaintance. At the time of puberty he becomes nervous, irritable and complains of indefinite disturbances, perhaps of the respiratory system, perhaps of the gastro-intestinal tract, possibly of the genito-urinary organs. If the case is studied at this time the individual may be found to have an enlarged thyroid gland, rapid pulse and nystagmus, or one of the other eye signs. During these years he is likely to develop a scoliosis. In the third decade, and perhaps in the first half of the third decade, an acute infection like typhoid fever, fright, some disappointment, or severe sorrow will be followed by development of well-marked Graves' disease. If Graves' disease does not develop the individual continues to become more nervous and apprehensive, perhaps develops some phobia and gradually passes into a condition of outspoken neurasthenia. Still later on, cardiac hypertrophy develops from the constant overactivity of the cardiac muscle. The increased blood pressure attendant upon the cardiac hypertrophy starts arterial and renal changes, or possibly the direct action of the altered thyroid secretion may produce renal changes, which, by further increase of blood pressure, interfere more and more with the hypertrophied heart and increase the atherosclerosis, so that in the last years of life the patient becomes a cardiorenal case of classical type; but perhaps without satisfactory antecedent history to account for the development of the disturbances. At any stage of the development of this train of pathological disturbances the condition may become quiescent and apparently be arrested. In women, for instance, we some-

time see this as an apparent result of marriage, although sometimes marriage and pregnancy are attended with an aggravation of the condition. Again, the arrest of the condition may be followed by retrograde changes; increase in weight, increase in the size of the hands and feet, mental sluggishness, loss of hair and arthropathies, which have been repeatedly described under the term of hypothyroidism.

If this definition appears in any degree accurate it is manifest that the term hyperthyroidism is inappropriate. Hemmeter,<sup>6</sup> Garré<sup>4</sup> and Klose<sup>8</sup> have suggested dysthyreosis, and Rehn<sup>13</sup> has suggested dysthyroidism. It seems that either name would be satisfactory. I believe my individual preference is for the latter.

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### CERVICAL DILATATION BY HYDROSTATIC PRESSURE.\*

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THE use of rubber bags filled with water for dilating the cervical canal of the pregnant uterus has nothing of newness to commend itself to your attention this evening, but I feel that, like many other things in the field of medicine, it is more or less forgotten or neglected, and thus a method of considerable value in obstetrics is not used as much as it deserves.

There is a wide range of cases in which hydrostatic dilatation is helpful, and of great value to the general practitioner as well as the obstetrician.

The indication for the use of the various bags is practically any condition where cervical dilatation is needed, except cases demanding *couchement forcé*. Among such cases are placenta previa, some cases of hemorrhage from partial detachment of the placenta, uterine in-

ertia during the first stage, scar tissue contraction of the cervix, eclampsia, pre-eclamptic toxemia, inducing premature labor or abortion, and may be of value in some cases of pelvic obstruction from fibroid tumor or ovarian cyst.

Of course, where haste is imperative and the cervix is hard and unyielding, no method of cervical dilatation can compete with vaginal Cesarean section, but the greater safety of these bags place them in advance of instruments, as Goodell's or the brutal and dangerous Bossi dilators.

Packing the vagina and lower uterine segment with gauze to secure cervical dilatation has the disadvantage that it takes from eight to twelve hours or longer and is at the best only partial, and also the likelihood of carrying infection from the vulva or vagina during the repeated motions necessary. In using a full-size bag, such as the large Champetier de Ribes, you secure more rapid relaxation of the cervical muscles, and in from one to five or six hours the dilatation is complete so that any operative work, such as forceps or version, can proceed at once.

The fact that the bag is placed easily and quickly, and remains a shorter time, gives less danger of infection than the gauze packing.

The various ways of manual dilatation, of which the Harris method with the fingers and hand is the best, are preferable to the rubber bag if the cervix is partly open and is soft enough to allow stretching of the muscle bands without danger of tearing; but how often we think we have done this carefully and safely, only to find on completion that we have one or more bad lacerations. Therefore I think that the Harris method should be reserved for use where the internal os is obliterated, and the rest of the canal gives promise of relaxing easily, so that the delivery can be accomplished at once.

In leaving the well-filled bag in the lower uterine segment we are imitating nature's way of using the amniotic bag of waters. Pascal's law in physics states that "pressure exerted upon any part of an enclosed liquid is transmitted undiminished in all directions. This pressure acts with equal force upon all equal surfaces and at right angles to them." Therefore, a well-filled bag in the cervix exerts not only downward but lateral pressure on the cervix.

Taking up the different indications I have mentioned: In "dry labor" we are simply substituting an artificial bag of waters for the one ruptured. In multipara it may not be necessary to do this, as the cervix is often relaxed and will give way to even a blunt dilator like the head, but in primipara it saves the patient suffering by preventing a long-drawn-out first stage, thus conserving her energy for the second, and we are less apt to have to apply forceps than if we let her use up her strength earlier. Also a patient who has had only an ordinarily long labor is much less apt to develop puerperal tem-

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perature than one whose resistance to infection has been lowered by exhaustion. In early rupture of the membranes it should not be forgotten that often it is caused by some abnormal presentation or position of the child, and a careful pelvic examination should be made, under chloroform if necessary. However, even in an abnormal condition we need complete dilatation and are better able to do what is needed. A number of times I have seen early rupture of the membranes due to occiput posterior, have secured good dilatation with a Champetier de Ribes bag, and had the occiput come down, rotate to the front, and the woman deliver herself in a much shorter time than if the bag had not been used.

*Placenta Previa.*—In this obstetrical emergency we have a number of alternatives, namely: (a) Podalic version and bringing down a leg as a tampon, usually at the expense of the child's life. (b) Packing the cervix and vagina with gauze, a useful emergency measure, but one that requires close watching, as the plug does not fit tightly with advancing dilatation, and there is also danger of introducing infection. As against the gauze packing, the large-size balloon continues to advance deeper into the cervix and acts as a good obturator until full dilatation is secured, when version may be performed with a greater probability of delivering a living child, or forceps may be applied. The bag should not be introduced without rupturing the membranes, as it might cause a further detachment of the placenta, as shown by the bleeding which follows when the bag is removed. Therefore the membranes must be ruptured, and if the case is one of central implantation, the placenta must be perforated and the bag placed well above it. It is a truism that every ounce of blood we can save the mother by a well fitting plug is of great importance to both mother and child. In central implantation, however, it is often preferable to do an immediate Cesarean section.

(c) Vaginal Cesarean Section: This is of value in placenta previa under certain conditions, good surroundings and intelligent assistance, but has the disadvantage of an incision made through the placental site, thus opening large maternal vessels with a risk of serious hemorrhage.

(d) Cesarean Section: This operation will give excellent results with both mother and child under limited conditions, Doederlein giving the following contraindications: (1) fever; (2) examinations made by physicians or midwives before entering the hospital; (3) tamponade; (4) extensive hemorrhage; (5) marginal insertion of the placenta (because in this case the patient can as well be treated in some other manner); (6) cases where the fœtus is either dead or not viable (amounting to about 50 per cent of hospital cases of placenta previa).

The mortality of the above methods of treating placenta previa is given by Doederlein as follows:

|                                      | Maternal Mortality | Infant |
|--------------------------------------|--------------------|--------|
| Podalic version . . . .              | 7.8%               | 73%    |
| Gauze packing . . . . .              | 50 %               | 54%    |
| Abdominal Cesarean Section . . . . . | 8.9%               | 33%    |
| Champetier de Ribes bag . . . . .    | 6.5%               | 45%    |

Thus we see that the use of the rubber balloon gives a lower maternal mortality than any of the other methods, and a fœtal that is only slightly higher than that of the best—Cesarean section.

Our statistics at the Buffalo General Hospital, though drawn from a much smaller series of cases, give approximately the same results. The fœtal mortality will remain high under any plan of treatment, as we usually have to deal with a child more or less premature, and always of low vitality on account of hemorrhage.

*Eclampsia.*—We do not know as yet the character of the toxemia producing the symptom-complex known as eclampsia.

One theory is that it is the result of an overcharging of the mother's system with an unchanged fœtal protein (syncytiotoxin), which has its origin in the fœtus or placenta, and is normally rendered innocuous by means of syncytiolysin developed in the maternal blood. If, however, for any reason the quantity of syncytiotoxin is too great to be neutralized, or if the elaboration of syncytiolysin is interfered with, symptoms of toxemia develop, and eventually give rise to eclampsia.

The second theory is that it is an excess of the results of metabolic change, which the liver and kidneys cannot dispose of.

Whatever the toxemia is, we know that it is the result of pregnancy, as we see it only in pregnancy, and that it usually clears up following the birth of the child. It is not necessary to induce labor in every case of eclampsia, as a large percentage of them can be controlled by the hypodermic use of veratrum viride and elimination. But where the convulsions are not lessening under this treatment, it is best to empty the uterus. If the patient is a primipara with a long, rigid cervix, this is more quickly done by abdominal or vaginal section; but if the patient is a multipara, the cervix is dilatable, or where a few hours will not make any difference, the various sizes of rubber bags will give dilatation so that delivery can be accomplished.

In therapeutic abortion or premature labor the cervix can be dilated with Hegar's graduated dilators until a small Barnes bag can be introduced, and a larger one later if needed, with a colpeurynter to fill the vagina and exert pressure on the cervix from below. Often the colpeurynter

ter alone will do the work. The only advantage this has over packing the cervix and vagina with gauze is that it offers less opportunity for infection.

I will quote a few case records to illustrate some of the given conditions.

*Case I.*—Uterine inertia. Mrs. C. W. Seen at Buffalo General Hospital. Age 27, 3 para. Rapidly advancing tuberculosis. General condition very poor. Pelvis normal. Child in L. O. A. position. Pains frequent but ineffectual, and only three fingers dilatation at the end of thirty-one hours. Exhausted and fainting at intervals. Pulse 140 and foetal heart becoming rapid. A large Champetier de Ribes bag was inserted and pains became strong and regular and full dilatation was secured in one hour. Membranes then ruptured and a small child was delivered spontaneously in fifty-five minutes.

*Case II.*—Occiput posterior and dry birth. Mrs. M. M. Seen at General Hospital. Age 22. Primipara. Pelvis normal. Estimated date of confinement May 1, 1914. Pains began May 18th. Child in R. O. P. position. Premature rupture of membranes at the end of twenty-four hours with no cervical dilatation. Pains strong and frequent for fifty-four hours, with intervals of rest under morphine and atropine, and only two fingers dilatation. Champetier de Ribes bag inserted and expelled in four hours with practically full dilatation. Head now in right occiput transverse position. Pains continued strong and regular, head rotated anterior spontaneously, and she delivered herself of a nine-pound ten-ounce child in three hours.

*Case III.*—Placenta previa. Seen at General Hospital. Mrs. K. Z. Polish. Age 24. Multipara. Pelvis normal. R. O. A. Eight months pregnant. Had been flowing moderately for six hours before admission to hospital.

The family physician had packed vagina with gauze at home. Vaginal examination showed two fingers dilatation and placenta covering about three-quarters of the os. A Champetier de Ribes bag was inserted and filled, which excited no apparent pains, but which was expelled when full dilatation was reached in three and a half hours. Podalic version and extraction done and a seven-pound living child delivered. Mother's condition poor, but made an uneventful recovery under use of hypodermoclysis and Murphy drip.

*Case IV.*—Pelvic obstruction due to uterine fibroid. Mrs. S. Age 28. Primipara. When seen in consultation had been in labor four days. Pains irregular, membranes ruptured, pelvic measurements normal. Temperature running from 100 to 102 degrees. Pelvic examination showed a hard mass, about half the size of foetal head, obstructing the right side of pelvis, and which could not be replaced in the abdomen under anesthesia.

I inserted a Champetier de Ribes bag for the purpose of getting enough dilatation to do an embryotomy, as a Cesarean section was contra-indicated on account of the infection evidently present. On returning some six hours later I was much surprised to find that in addition to securing dilatation, that the tumor mass had been displaced and had slipped into the abdomen, and I was able to deliver the child with forceps without difficulty. The family physician later reported to me that this patient died after three days, and that autopsy showed a general peritonitis from a badly broken down uterine fibroid. Evidently the four days of labor and pressure had caused degeneration and infection of the mass, and earlier treatment would probably have given a different outcome.

*Case V.*—Rigid cervix and failure to secure dilatation with rubber bag. Mrs. Y. Age 30. Para 3. Pains began on the day of estimated confinement at 6 P. M. Thinks that membranes ruptured some days ago, and that waters had been escaping at intervals. Pelvis normal. Position of child right occiput posterior. Had steady though not severe pains for twenty-four hours with only one finger dilatation, at which time I inserted a Champetier de Ribes bag. It was necessary to use chloroform, as I found the cervix very rigid, and it took half an hour to secure the two fingers dilatation needed to insert the bag. Pains strong and regular for eighteen hours with no further dilatation, and I removed the bag. At the end of four hours more of strong pains with no more dilatation, she commenced passing meconium from the vagina and the foetal heart became rapid. I then did a vaginal Cesarean section as quickly as possible, and delivered a still-born child with forceps.

In making the cervical incisions it gave the impression of cutting unusually hard, non-pregnant cervical tissue.

The mother left the hospital at the end of a week, and I am unable to give an explanation of this condition, but it is the only case in which I have had the Champetier de Ribes bag fail utterly to accomplish dilatation.

In using these bags in primipara it is sometimes necessary to insert a small Barnes bag to get sufficient room to use a full-sized Champetier de Ribes balloon, but in multipara it is rarely needed, as the cervix is soft and will give way readily to the fingers. The bags should be sterilized by boiling, well coated with vaseline, and introduced with an ordinary uterine dressing forceps or the fingers.

In some cases it is necessary to seize the cervix with a volsellum, but ordinarily not. Sterile water should be used in the bag, and the irrigating can, with a long rubber tube held five or six feet above the bed so as to completely fill it; otherwise it will be expelled before completing its work.

A more satisfactory method is to fill the bag by using an ordinary Davidson syringe which can be readily sterilized by boiling and with which you can obtain a considerable degree of intra-cervical pressure. The membranes should be ruptured, except early in pregnancy, and this is important, as the balloon, in addition to the bag of waters, is apt to cause displacement of the presenting part and consequent malposition.

I have heard the objection made that rubber dilators deteriorate so rapidly as to make their cost excessive. I have not found it so in my personal experience. Another objection made is that to give long service it is impossible to sterilize by boiling and that it should be done by chemical means, as creolin, lysol or bichloride.

Such chemical sterilization may possibly be permissible for other things and uses, but for anything that is to be introduced into the uterine cavity at term I consider it risky, or worse, to use anything but boiling. We would not think of using instruments immersed in some antiseptic solution for a laparotomy, and no more should we for intrauterine work.

To recapitulate: I would emphasize the value of the Champetier de Ribes bag in (a) prolonged, tedious first stage, whether due to dry labor, inertia uteri, rigid cervix, or malposition as occiput posterior or breech; (b) placenta previa of the marginal or lateral type; (c) producing premature labor, as in eclampsia or for any therapeutic reason.

## THE PROGNOSTIC VALUE OF CHOLESTERINEMIA IN CHRONIC NEPHRITIS.\*

(Preliminary Report.)

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NEW YORK CITY.

**I**N a paper read before the New York Pathological Society in December, 1913,<sup>1</sup> I offered the results obtained in the examination of the bloods of a small series of cases of chronic nephritis. I made this statement at that time, namely: "I entertain the belief that cholesterinemia is, in some way, of prognostic importance in cases of chronic nephritis." Examinations which I have since made support this belief. That is why I present my more recent findings.

In this, as in all my work in cholesterinemia, I have employed the extraction and colorimetric method for the quantitative determination of cholesterine, as outlined in a previous paper.<sup>2</sup> This method I continue to find most serviceable and simple of execution.

Before proceeding to the recital of cases which came under my observation at the German Hospital, I merely wish to state again that the normal figure of cholesterinemia, as now

generally agreed upon, is 1.50 grams per 1,000 cc. of serum. I am inclined to believe, however, that future work on the subject will show that the normal figure has been placed a bit too low.

In presenting the following cases of chronic nephritis, I hope to show that a hypercholesterinemia accompanies the condition, and that a fall in this hypercholesterinemia, or its absence, is apparently of some prognostic interest, if not of importance.

*Case No. 1.*—Male, age 39, no fever; urine presented the evidences of chronic nephritis; secondary anæmia, no jaundice, blood pressure 225 mm., some fluid in pleural cavities, Wassermann negative, general condition good; heart revealed endo- and myocarditis, although peripheral œdema was absent. In this case 1 cc. serum contained .00286 grams of cholesterine, the moderate hypercholesterinemia we would expect.

*Case No. 2.*—Male, age 58, no jaundice, no fever, moderate arterio-sclerosis, Wassermann negative; urine presented evidences of a chronic nephritis; general condition good. In this case 1 cc. serum contained .00310 grams of cholesterine; again a hypercholesterinemia, although the arterio-sclerosis may have been responsible for a part of the increase.

*Case No. 3.*—Male, age 59, no fever, no jaundice, moderate sclerosis, Wassermann 4+; urine showed an existing nephritis; general condition good. In this case 1 cc. serum contained .00374 grams of cholesterine.

*Case No. 4.*—Male, age 69, no fever, moderate sclerosis; urine showed hyaline and granular casts, and 0.6 per cent albumen; blood pressure 250 mm., general condition good. In this case 1 cc. serum contained .00238 grams of cholesterine.

*Case No. 5.*—Male, age 64, Wassermann negative, temperature 103 degrees F., general condition poor; diagnosis, purpuro hemorrhagic with parenchymatous nephritis. In this case 1 cc. serum contained .000501 grams of cholesterine. This marked hypocholesterinemia was, in my opinion, due to the fever; without the fever I would, otherwise, confidently expect a higher figure for the cholesterine, notwithstanding the fact that the man was not in good condition. Such a low cholesterine figure in nephritis I have only seen in uræmic states.

*Case No. 6.*—Male, age 41, temperature 99.8 degrees F.; urine showed a heavy trace of albumen, and hyaline and granular casts; Wassermann 1+, general condition good. In this case 1 cc. serum contained .00385 grams of cholesterine.

*Case No. 7.*—Female, age 16; post-typhoid nephritis, with heavy trace of albumen and granular cast in the urine; no fever, no jaundice, no sclerosis; 1 cc. serum contained .00325 grams of cholesterine. Although my examinations of

\* Read before the Clinical Society, German Hospital, New York City, February 19, 1915.

typhoid fever cases have shown me that the measure of cholesterinemia is high during and after convalescence, I have never seen such a high figure in an uncomplicated typhoid convalescent. The general condition of this girl was good.

*Case No. 8.*—Female, age 27, temperature 102.4 degrees F., no jaundice, no sclerosis; urine showed nephritis; heart showed endocarditis, probably malignant, with a blood count of 32,000 W. B. C. and 71 per cent polynuclears. General condition fair. In this case the figure of .00166 grams of cholesterine per 1 cc. serum cannot give a prognostic indication because the fever undoubtedly influenced the measure of cholesterinemia.

*Case No. 9.*—Male, 39 years of age, no fever, blood pressure 170, no jaundice or sclerosis; urine showed casts and .6-.8 per cent albumen. General condition good. In this case 1 cc. serum contained .00212 grams of cholesterine.

*Case No. 10.*—Female, age 34, no fever, no jaundice, blood pressure 220-260 mm.; urine showed heavy trace of albumen with hyaline casts; some œdema of feet; eye-grounds showed small retinal hemorrhages, not a condition that could be called albuminuric retinitis; she presented no evidences of an impending uræmia; her general condition was fairly good. In this case 1 cc. serum contained .00322 grams of cholesterine. We have here what can be termed a "threshold" case. The measure of cholesterine continued high, although one would rather expect it to fall at any time. Unfortunately, subsequent examinations were not made in this case, nor was I able to follow its clinical course.

*Case No. 11.*—Male, age 69 years, blood pressure 270 mm., no fever, slight œdema of eyelids, headache, dyspnœa, semi-comatous condition. Urine excretion amounted to only 130-200 cc. per day, albumen 1.2 per cent. In this case 1 cc. serum contained .00170 grams of cholesterine. Here we have a figure practically normal; a hypercholesterinemia, especially in the absence of fever, was to be expected. Two days later the patient died in uræmic coma. I was unable to get another specimen of blood.

*Case No. 12.*—Female, age 27, admitted with a diagnosis of chronic interstitial nephritis; the urine showed a very heavy cloud of albumen, and granular casts; no jaundice, no sclerosis; there was œdema of the hands and face, and she ran a 103-degree F. fever. The general condition was rather poor. The first examination of the blood, under the conditions above outlined, showed .00100 grams cholesterine per 1 cc. serum. From a prognostic point of view I was unable to draw conclusions because I felt quite sure that the fever of 103 was largely, if not entirely, responsible for the comparatively low cholesterine figure. About three weeks later I made a second examination. The patient was

free of fever, blood pressure 226 mm.; urine showed granular casts and 1 gram per liter of albumen; her general condition continued poor. The cholesterine figure obtained, under these conditions, was .00163 grams per 1 cc. serum. Dealing as we were with a case of chronic nephritis, a condition in which all investigators agree a decided hypercholesterinemia is to be expected, and especially because there was nothing in her condition to cause a fall in the measure of cholesterinemia, I ventured to give a poor prognosis in this case. A month later I again examined the blood in this case. Again she was fever free, her blood pressure was 220-180 mm. and her eye-grounds showed "a few plaques of fatty degeneration in both retinae." Clinically, we are wont to look upon retinitis as the forerunner of an impending uræmia, or of an already present uræmic state. In this patient there was nothing else to suggest an impending uræmia. The third blood examination showed .00190 grams cholesterine per 1 cc. serum. Despite this slight increase over the second examination, we were not willing to admit that her general condition had improved any. While I was not fortunate enough to obtain further cholesterine figures, this patient died in uræmia coma two months later.

*Case No. 13.*—Female, age 60 years, temperature 100.8 degrees, no jaundice; urine showed large amount of albumen, hyaline and granular casts; no œdema, eye-grounds negative, Wassermann reaction negative; marked arterio-sclerosis. Under these circumstances 1 cc. serum showed .00173 grams of cholesterine. This is a low figure, taking the nephritis, and especially the arterio-sclerosis, into consideration. The following day the patient developed a delirium ending in coma, and died two days later.

*Case No. 14.*—Female, age 25 years, no fever, blood pressure 188 mm.; urine showed 2 grams of albumen per liter, hyaline and granular casts. The woman was five months pregnant and gave signs of a threatening uræmic (eclamptic) state. At that time her blood showed .00254 grams of cholesterine per 1 cc. serum. We looked upon this case with a favorable prognosis; the attending gynecologist, nevertheless, deciding to terminate the pregnancy, a vaginal Cæsarean section was done. Fifteen days after operation I again examined the blood. The patient was in good condition, free of fever; urine showed a heavy trace of albumen and granular casts. The second examination showed .00204 grams of cholesterine per 1 cc. serum. In this particular case the fall in the cholesterinemia was undoubtedly due to the fact that the nephritis itself had improved. The patient eventually left the hospital and I am reasonably sure that she was cured of her nephritis, and that her cholesterinemia had returned to normal.

*Case No. 15.*—Female, age 24, no fever; urine showed "very large amount" of albumen, with granular and hyaline casts; no œdema, blood pressure 270 mm. She complained of headache and nosebleed and palpitation. The blood, under these conditions, showed .00351 grams of cholesterine per 1 cc. serum. Several days later the patient developed undoubted signs of an impending uræmia; her temperature, while above normal (100 degrees F.), was not sufficiently high to materially affect the measure of cholesterine, and yet the second examination showed a decided fall—.00214 grams of cholesterine per 1 cc. serum. I was unable to further observe this case.

*Case No. 16.*—Male, age 45, no fever, no jaundice, no sclerosis; urine showed granular casts and  $1\frac{1}{2}$  grams of albumen per liter. Urea output amounted to .8 per cent, blood pressure 220 mm.; Wassermann negative; eye-grounds showed retinitis and the patient vomited very frequently. Diagnosis of chronic nephritis with impending uræmia was made. The blood examination, under these conditions, showed .00171 grams cholesterine per 1 cc. serum. Here again, with nothing present to lower the measure of cholesterinemia in a condition in which a decided increase over the normal is to be expected, a practically normal figure was obtained. A bad prognosis was ventured in this case. Five days later, with the urinary findings unchanged, patient continued to vomit, and showed decided muscular twitchings and drowsiness. The blood taken at this time showed .00185 grams cholesterine per 1 cc. serum. I was permitted, at this stage, to give the patient 1 gram of pure cholesterine, in four doses per os at three-hour intervals. The following day all of his uræmic symptoms cleared up; he acted perfectly rational and said that he felt much better. Through a misunderstanding, I failed to get a specimen of blood following the administration of the cholesterine, but I have no doubt, from earlier experiences with the administration of cholesterine, that the amount in the blood was increased in consequence. Twenty-four hours later the patient returned to his uræmic state and, failing to improve, died in coma in five days.

*Case No. 17.*—Female, age 35, no fever, no sclerosis, no œdema; urine showed 5 grams of albumen per liter, hyaline and granular casts; the urea output was 0.015 grams per 1 cc. Blood pressure 220. Patient in a comatous condition. Under these circumstances the examination of the blood showed .0006 grams of cholesterine per 1 cc. serum—an exceedingly low figure. Here we were dealing with a straightforward case of nephritic uræmia. In less than a week the patient died in coma.

*Case No. 18.*—Male, age 57, no fever, no jaundice, no œdema, very slight sclerosis, Was-

sermann negative; urine showed heavy cloud of albumen and hyaline and granular casts. The general condition was good, and 1 cc. serum showed .00285 grams of cholesterine. In three days the patient suddenly developed symptoms of uræmia and went into coma very rapidly. I was fortunate enough to get a specimen of blood before he died, and he was free of fever at the time, and the examination revealed a most striking fall in the measure of cholesterinemia. In three days the cholesterinemia fell from .00285 to .00061 grams per 1 cc. serum.

*Case No. 19.*—Male, aged 55 years, admitted to the hospital in a comatous state, giving the impression of a case of diabetic coma. The first two urine examinations verified the original impression, for both the Fehlings test and test for acetone were present. Subsequently, at the end of the second day, both these reactions disappeared; that is, the chemical reactions for these substances were absent. We ascribed this condition to the fact that the patient had taken large quantities of aspirin before entering the hospital. At the time the blood was taken for a quantitative cholesterine determination, the patient was free from fever, was not jaundiced, had a blood pressure of 190 mm., W. B. C. 12,000, with 73 per cent polys.; the eye-grounds were normal, the Wassermann reaction was negative, and there was arterio-sclerosis. The urine showed albumen and granular casts and 0.018 grams of urea per 1 cc. of urine. A diagnosis of nephritis with uræmia was made. Five days after admission the patient died, having remained comatous, and having developed a hemiplegia. The result of the blood examination showed .00099 grams of cholesterine per 1 cc. serum, and the autopsy diagnosis was nephritis, arterio-sclerosis and cerebral hemorrhage. In this particular case there was nothing to reduce the quantity of blood cholesterine. On the contrary, clinically, taking the nephritis and arterio-sclerosis into consideration, we were justified in expecting a hypercholesterinemia. The figure of .00099 grams cholesterine per 1 cc. serum convinces me that we were dealing with a case of uræmia, although it is difficult to say whether the uræmia or the cerebral hemorrhage was responsible for the fatal ending.

In reviewing these cases, I have mentioned those clinical factors which justify the diagnosis in each case, and also those factors which experience with over six hundred individual cholesterine examinations has taught me must be taken into consideration to correctly interpret cholesterinemia. Those clinical factors which must be taken into consideration—and of late I have been more impressed with the absolute necessity of doing so—are: (1) Fever. Fever exerts a profound influence in reducing the cholesterine content of the blood. Experience has shown me that only temperature above 100 degrees F. is



to be looked upon as fever, in this connection. (2) Jaundice, especially when caused by obstruction, increases the cholesterine of the blood. With hæmolytic jaundice I have had practically no experience. (3) Arterio-sclerosis. The measure of cholesterinemia has been found to be increased in cases of progressive arterio-sclerosis. (4) Edema and ascites. Transudates, I have found, contain an appreciable amount of cholesterine, whether found in the chest, abdomen, or sub-cutaneous tissue; the amount found in transudates undoubtedly was, originally, in the circulating blood, and should be taken into consideration. (5) *Pregnancy* must always be taken into consideration; there is a progressive increase of cholesterine in the blood as pregnancy advances. (6) Gallstones, when aware of their presence; my results in cases of cholelithiasis have shown astounding increases over the normal cholesterinemia. (7) From my limited experience with obesity and diabetes, I am led to believe that a hypercholesterinemia exists in these conditions.

If we could explain uræmia, the cause of death in cases of chronic nephritis, dying in coma, would probably be clear to us. I am not offering hypercholesterinemia as the cause of nephritis, nor am I offering hypocholesterinemia as the cause of death in nephritis; but a hypercholesterinemia does accompany nephritis, and in those cases which do badly and develop uræmia the measure of cholesterinemia is decidedly reduced, as my results amply show.

The kidneys do not normally excrete cholesterine. The hypercholesterinemia of nephritis is not due to any functional excretory disturbance on the part of the kidneys. I am not prepared to say whether the urine, in nephritis, does contain cholesterine. But we do know that retinitis, which is often the first sign of an impending or already present uræmia state, is caused by local deposits of cholesterine derived without doubt from the blood. Furthermore, cases of nephritis, without retinitis, show a higher cholesterine figure in the blood than cases with retinitis.

According to the work of Widal, Weill and Laudat,<sup>3</sup> which shows an almost definite inverse relationship between the urea and cholesterine contents of the blood, the cholesterine in nephritis could be looked upon as playing a rôle analogous to an antitoxin. Cases of nephritis, doing well, show a hypercholesterinemia. Cases of nephritis, with a normal or comparatively normal cholesterinemia, or a hypocholesterinemia, without a clinical cause for the measure of cholesterinemia, in my series of cases have done badly, and died. I should not like to say that cholesterine alone is responsible for this hypothetical antitoxic action. But I should like to go on record as saying that the lipoids of the blood probably do play the life and death rôle

in the animal economy. Further researches along these lines are not only necessary, but of paramount importance. It was also in that paper read before the New York Pathological Society last year that I hinted at this important rôle that the lipoids play in infectious diseases. Cholesterinemia very accurately reflects lipoidemia and just because we have a comparatively simple but, unfortunately, still a rather long method for determining cholesterine quantitatively, we must, in my opinion, look to cholesterine to solve not only many of our modern problems in medicine, but to explain many of our accepted theories.

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### PSYCHOANALYSIS AND ITS FIELD OF USEFULNESS.\*

By CHARLES R. PAYNE, A.B., M.D.,  
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I SUPPOSE that to each of us here to-day, there have come patients who complained of various distressing symptoms which they described largely as "bad or awful feelings" or indescribable fears and dreads or compulsions to do strange or foolish acts; a careful examination of these odd patients failed to reveal any physical defects or ailments to account for the extraordinary symptoms they described and our treatment was correspondingly haphazard and usually unavailing to help these poor sufferers.

It remained for Prof. Sigmund Freud of Vienna and his pupils to bring order out of this chaos and develop a method of treatment which is of value against the incapacitating inhibitions of the neuroses and psychoneuroses. This method of treatment is called psychoanalysis.

Freud, who is professor of nervous diseases at the University of Vienna, now a man of about sixty, has devoted his life to the study of the functional nervous maladies, the hysterias, anxiety conditions, phobias, obsessions and those mixed conditions, bordering on the true psychoses which, for want of a better term, we call the psychoneuroses. By very careful observation of his cases, he has worked out many of the etiological mechanisms underlying the strange symptoms which have so often baffled the physician and has thrown a flood of light upon the mysterious mental manifestations.

I will briefly summarize some of the results of his work.

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Freud found that most of these functional nervous maladies had their origin in conflicts within the patient's mind, conflicts between two sets of forces, one, the primitive, inborn, instinctive tendencies, the other, the normal, cultural acquirements which come from education and life in a civilized society. Every child is first of all a young savage with certain strong instinctive longings which it desires to gratify, regardless of everything except self. Life in civilized society is so constituted that the growing child is constantly called upon to sacrifice many of these primitive desires to the demands of culture; it is the conflicts so originated that are at the bottom of the later nervous manifestations.

Of the two great fundamental instincts in the child, the hunger and the sexual instincts, the hunger instinct meets comparatively few obstructions, since it is almost always gratified. The sexual instinct, on the other hand, is inhibited in countless ways, almost from the first. We are accustomed to think of the sexual life as beginning at puberty but Freud has shown that while the full sexual development begins at that period, the seeds of the sexual life are present and active even in the suckling, although in disguised form. Here, I should add that Freud gives the word sexual a much broader meaning than we are accustomed to use, one more in the sense of the word "love." He believes that the instinct which we call sexual in the adult, is present in the child in the form of many component or partial instincts. An over-emphasis or fixation of one of these partial instincts may result in a perversion in later life.

The first objects of the child's love are taken from its immediate circle, parents, nurses and the like. As the child grows, it finds that it cannot entertain a too passionate love for these closely related persons but must find a love-object in some person outside the family. Right at this point is where many neuroses begin. The child begins to feel that it is his right to love the parent of the opposite sex as strongly as it had been doing and yet is unable to free this love and direct it toward a strange person. Hence, there arises a conflict within the mind between the primitive, instinctive sexual longing and the moral desire to do right. Consciousness will have nothing to do with the unbearable thought of sexual desire for a near relative and the unconscious or primitive part of the mind will not give up the old desire. What is the outcome? The unacceptable thought or wish is forced out of consciousness into the unconscious, "repressed" as Freud calls this forcible forgetting.

Now this unacceptable thought or wish, which has been split off from the main body of consciousness, does not lose its power to act. It remains very much alive in the unconscious but cannot come to direct expression because of the

repressing force which first drove it out of consciousness. It can only appear in the disguised form of symptoms or in dreams when consciousness is relaxed. Hence, symptoms in the psychoneuroses are compromise products of these two contending forces.

Of course, the patient is wholly unaware of what these repressed wishes are, indeed, is probably ignorant that he has any such repressed thoughts. But if we would relieve him permanently of his distressing symptoms, and right here, let me say that no patient has more distressing, soul-trying anguish than the psychoneurotic, we must trace his symptoms back to these submerged sources. In this search for the origin of symptoms, direct introspection cannot help us at all, for introspection can reach no farther than consciousness, while the roots of the trouble lie beyond the domain of consciousness in the unconscious.

Here is the point where psychoanalysis is of such surpassing value and exceeds in efficiency all other methods of psychotherapy. The whole purpose of psychoanalysis is to reveal these hidden or repressed motives in the patient's mind. Its mode of procedure is briefly as follows: The patient is seated in a comfortable position and freed so far as possible from the distracting effect of external stimuli, such as noises, bright lights, etc. He is allowed to talk on any subject he may suggest which will almost invariably be some subject of great moment to himself. To the different topics brought up, the patient is urged to tell everything which comes into his mind without directing his thoughts at all. This is the "free association" method. All mental contents are held together by associations, hence, if we start at one end of a chain of associations, we may be very sure that the chain will lead us to some group of ideas important to the individual. The most valuable material for analysis however, is the patient's dreams, for these have been shown to be largely the product of the unconscious portion of the mind which we are endeavoring to fathom. By having the patient relate his dreams and then using the method of free association on the related dream content, we find the hidden material which we are seeking.

This is not as simple a process as it sounds, for the subject of dream interpretation is probably the hardest thing in psychoanalysis. Freud has devoted his largest book to the subject of dreams. I cannot go into the details of this here, but may say in passing that anyone who wishes to do real psychoanalysis must be thoroughly familiar with dream analysis, otherwise he will never penetrate to the deeper mental strata of the neurosis.

A person who is entirely unfamiliar with the subject, may ask, how does this procedure cure the neurosis. The fact is that as soon as the conscious and unconscious are thoroughly amal-

gamated, that is, as soon as consciousness realizes that these motives and wishes were present in the unconscious, these buried desires or ideas lose their power to form symptoms. We might say roughly that the mind becomes a unified whole instead of a house divided against itself. I have mentioned only one kind of wish which may be repressed and form the basis for neurotic symptoms. There are countless others. Any primitive desire which is unacceptable to the person's moral nature may be repressed and become a factor in starting or increasing a neurosis.

A few words now concerning the conditions which are suitable for psychoanalysis. These are chiefly hysteria, anxiety hysteria, various anxiety conditions, such as phobias of all kinds, obsessions, and probably certain mental depressions. There are several indications and contra-indications which must be borne in mind. First, the patient must be intelligent, not too old, that is, not past middle age, and must honestly want to get well. Psychoanalysis takes much time and imposes hard work upon both patient and analyst and unless the symptoms cause more discomfort than the patient gains from allowances which are made for him because of these symptoms, he will not make the sacrifice of being analyzed. This fact rules out many hysterics who derive so much pleasure from the allowances made them by their long-suffering families that they do not want to get well. To get well would mean giving up their excuse for being pampered. Hence, no patient can be analyzed to advantage who does not have an honest and earnest desire to get well.

But in contrast to this class of cases, there is another class of highly intelligent, highly cultivated and most useful people who are bound down by nervous inhibitions and suffer the torments of the damned from anxiety conditions; these yield splendid recoveries to psychoanalysis.

A psychoanalysis is no easy task. It demands a great deal of time, patience and perseverance on part of both patient and physician. It may be compared to a serious surgical operation and certainly demands the same skill of the analyst, though more in the psychological than in the manual field. But, on the other hand, it attains results which are obtainable by no other method of treatment. These poor patients, who are often of the most refined and intelligent class, who should be doing splendid work in the world, are inhibited by their mental afflictions, such as fears, phobias or obsessions, until they become recluses, chronic invalids or even suicides. Under older forms of treatment, they were prescribed outdoor exercise, various diets, baths, high enemata, general tonic treatment, travel, etc., none of which was of more than temporary help. It remained for Freud, by his patient and penetrating study, to work out the underlying

etiology and devise a method of treatment which really cures these cases and sends the sufferers back into the world of reality, freed from their afflictions and able to live useful and efficient lives.

## BOWEL OBSTRUCTION FOLLOWING PELVIC OPERATION.\*

By WILLIAM D. JOHNSON, M.D.,

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**O**BSTRUCTION of the bowels following pelvic operations differs, in only a few details, from obstruction of the bowels in general, and these differences are aetiologic and anatomic.

I had supposed that this paper was to be a part of a symposium on bowel obstruction, but inasmuch as it is the only one on the subject, I will digress enough in a general way to round out the subject.

Bowel obstruction following pelvic operations may usefully be divided into two classes, adynamic and mechanical ileus.

The adynamic type being most frequently the result of trauma and of peritonitis.

The mechanical type most frequently, in my experience, has been caused by adhesions, with resulting angulation, in a few cases due to operation, in a few cases caused by obturation and secondary infiltration in malignant growths. Stricture as a result of ulceration and contraction upon healing has been met with less frequently.

Many of these principal factors have as an adjuvant more or less crippling of the peristaltic power of the bowels by peritonitis.

Early, in the days of delayed diagnosis and still more tardy operation, the part played by evacuation of large collections of pus with an accompanying collapse of the surrounding wall, made up in large part by the agglutinated intestines with a secondary sharp angulation of the adherent coils, as a factor in the production of obstruction, forced itself upon my attention with disagreeable frequency. I still see several cases each year on the average in which this cause is the principal one in the production of obstruction.

I have learned to look for signs of obstruction, usually within the first week following the evacuation, giving premonitory symptoms, such as stormy peristalsis, intermittent colicky pains, and finally inability to pass flatus and feces, a greater increase in the peristalsis and vomiting. This type of obstruction, caused in this manner, is nearly always the result of pelvic infections, and is as nearly distinctive as any of the special group to which my title refers.

It has seemed to me that mechanical obstruction has become more frequent since the general use of iodine has become common practice in the preparation of the abdomen. Unless one is

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particularly careful to protect the edges of the incision with moist gauze swabs, or the intestines are prevented from prolapsing, their surfaces might become blistered from contact with the iodine left on the skin. This contact, it would seem to me, might be adequate to cause blistering of the peritoneal coat with denudation of the same. These denuded spots furnish in the period of arrested peristalsis following abdominal section, a very favorable opportunity for adhesions. If this be active as a cause, it of course does not especially apply to pelvic operations, but is common to all operations on the intestines.

The symptoms of obstructions following pelvic operations do not, and need not, differ materially from obstruction following other operations.

In the greater number of cases the onset of obstruction is abrupt, and the onset of symptoms is correspondingly sudden.

The first symptom is pain felt by the patient at different levels of the abdomen, these differences in level corresponding to the portion of the intestine obstructed.

If the obstruction is in the small intestine, the initial pain, or at least the location of the greatest severity of the pain, is around or above the navel.

If the obstruction is in the large intestine beyond the hepatic flexure, the initial pain will be felt most severely below the navel.

If the obstruction is in the descending colon, the initial pain will often be associated with bladder reflex, the storage portion of the digestive tract and of the urinary tract having reflex areas in common. This one symptom, the location of greatest severity of the initial, reflex, rhythmical, colicky pain, has been of value to me in pre-operative localizing of the probable site of obstruction.

If the obstruction is in the second portion of the digestive tract, which ends somewhere near the hepatic flexure of the colon, there will be nausea and vomiting early as a part of reflex control which the second portion of the digestive tract has and exercises over the first.

The initial reflex vomiting should not be confused with the later regurgitant vomiting, usually believed to be due to reverse peristalsis.

Stormy peristalsis is a prominent and important symptom of mechanical obstruction. It is intermittent, rhythmical in character, as is the contraction of all unstriped muscle. The interval between waves varies with the length of the intestine above the block, just as does the frequency of the regurgitant vomiting.

A symptom of the greatest importance, by reason of its absence, is the occurrence of a rise of temperature in primary mechanical obstruction.

On several occasions I have been misled in the use of this symptom by the occurrence of obstruction in the midst of septic processes.

Of course, the most important symptom is the one which has given the name to the disease, the inability to pass flatus and feces, and the desire to do those very same things.

Three symptoms which should never be mentioned in any discussion of obstruction of the bowels, the writing of which into the old-time classical description of the disease has caused more deaths in obstruction of the bowels than any other factor of which I am aware, I mention only that they may be forgotten: abdominal distention, fecal vomiting and collapse. These are not the symptoms of obstruction of the bowels, but the symptoms of delay in the diagnosis and treatment.

How much a factor the Fowler position has been in the production of obstruction in pelvic surgery I do not know; so good a surgeon as Joseph Price thought this was an important factor. Another diagnostic measure first brought to my attention by Dr. Ross G. Thompson of Warsaw is the use early in suspected obstruction of a dose of pituitrin. I have used this and it has proven an aid in the diagnosis by increasing the peristalsis without relieving the obstruction. Its chief value, it seems to me, lies in the differentiation between the adynamic and the true mechanical ileus. Given these symptoms and signs, coming in this order, the diagnosis of mechanical obstruction is one of the most certain with which I have become acquainted.

My medical friends are making the diagnosis within the first twenty-four hours regularly and precisely, and because of this timely diagnosis the results following operations have greatly improved; in fact, my medical friends make fewer mistakes than I do myself. In general, when I have gotten in wrong, or too late, the diagnosis either tardy or erroneous, has been all my own making; given the diagnosis, I think we are nearly unanimous as regards treatment. In a certain large percentage of cases a probable anatomical diagnosis, as to location and a guide for placing the incision, is possible.

The median suprapubic incision will cover most cases under discussion, but, as Moynihan has cleverly said, "If the first incision is not properly placed, it will at least have shown the need for the second, and where it should be located."

The method of operating will be determined by the timeliness, or otherwise, of the diagnosis, and the operation. Perhaps ten per cent, perhaps twenty per cent, should be operated upon, upon their own bed, under a local anaesthetic, and bowel drainage resorted to.

All cases should have the benefit of that greatest addition to surgical technique since the in-

roduction of antiseptics, anoci-association. I find that my technique of anoci-association is most perfect when I try to complete the operation with a local anesthetic alone, even if I fail to so complete it. In other words, I will use novocaine more thoroughly if I try to complete the operation with this alone, and the patient will be protected from the results of trauma more thoroughly.

I need not go into the details of intra-abdominal work further, to emphasize the necessity for extreme gentleness, and avoiding if possible evisceration with its consequent pulls upon the mesentery, a profound shock-producing procedure. Also the wisdom, if a search for the site of obstruction is necessary, of finding the collapsed portion of the intestine and working up to the block, rather than handling the distended coils of intestines and working down to the block, as pointed out by Mayo.

Now, perhaps my greatest difficulty has been to formulate for my own guidance a rule as to when, and when not, to drain the bowel. It is easy enough to say, when in doubt, drain; it is hard to tell when to doubt.

The method of bowel drainage which I have used for six or seven years is an adaptation of the Murphy button combined with a rubber tube. The advantage of this method is that prompt and cleanly bowel drainage is obtained with a water-tight joint between the rubber tube and the bowel which will stay water-tight for four or five days. Through this bowel drainage opening, large quantities of normal saline may be introduced; through this, toxic material above the block is evacuated; by dropping the intestine back into the abdomen, spur formation is avoided, and the resulting fecal fistula will heal spontaneously if the normal lumen of the bowel is unobstructed.

In those obstructions of the bowels following pelvic operation, one may say that in general the obstruction will be in the lower end of the small intestine, or in the large intestine, so that if the lumen of the bowel is open for drainage purposes there will be very little danger of the opening being above what I choose to call the Starvation Death Line. In practically no case will the site of obstruction be above the toxic death line of J. W. Draper.

Deaths from water starvation are comparatively rarely seen now in obstruction treated with timely operations.

Toxic death, caused by relief of the obstruction, and the passage of the putrid products of decomposition into the collapsed and hungry intestine beyond the block, are still fairly common in the hands of men who do not, in some way, institute bowel drainage.

## A CASE OF CHANCRE OF THE TONGUE.

By ANDREW J. GILMOUR, Ph.B., M.D.,  
NEW YORK CITY.

NOVEMBER 22, 1912. E. H., female; single; age, 18; nativity, United States; occupation, factory work.

*Present History.*—The patient first noticed the sore on her tongue about ten days ago.

*Physical Examination.*—On the above date the patient was first seen and presented a lesion situated on the upper surface of the tongue, three-quarter inch behind the tip and just to the left of the median line.

This lesion was one-quarter inch in diameter, indurated, slightly raised with a white coating over its surface.



The sore was circular in outline and had a sharp-cut border which extended down and under the sore slightly undermining it. It was surrounded by a very marked groove which was distinctly depressed below the normal surface of the tongue. The other border of this depression was sharp-cut and extended directly down into the tongue at right angles to its surface, and not on a slant as was the inner border of this depression.

The submental glands on both sides were much enlarged and indurated causing a swelling in this location. The process was more marked on the left side. On this side the glands had more or less lost their individuality and were tender. This swelling presented a glazed appearance.

The Wassermann and Noguchi tests made a few days after admission were negative.

The examination of the lesion itself showed spirochete pallida.

The diagnosis was confirmed after a few days by a general adenopathy and a well-marked rash which did not entirely fade until the first part of January, 1913. There was no sup-puration of the submental glands and they subsequently became normal in size.

## OBSERVATIONS CONCERNING OPERATIVE TREATMENT.\*

By **ONSLow ALLEN GORDON, Jr., M.D.,**  
BROOKLYN, N. Y.

IT is my purpose to emphasize a few points concerning pre-operative, operative, and post-operative treatment. These points are not original with me, but are gathered from the methods of the best men with whom I have been associated during the past year at the Woman's Hospital, and from a detail record of over four hundred of their surgical cases operated during the eight months that I was assistant in the operating room. These records, which I now present, required a large amount of work, but that they are the best method of establishing definite conclusions, not personal opinions, cannot be doubted.

I will briefly consider the subject under three headings:

First, pre-operative; second, operative; third, post-operative treatment.

The pre-operative treatment can well be considered as beginning at the moment the patient enters the reception room of the hospital. That mental conditions directly preceding an operation are factors in the causation of a stormy or a smooth convalescence is accepted by all. Artistic hospital reception rooms, and courteous hospital attendants should no longer be considered luxuries, but necessities.

As a rule the first pre-operative medication is catharsis. It is my opinion that pre-operative catharsis is, as a rule, too severe. Castor oil, one-half ounce or an ounce, is frequently used; others use calomel in large or divided doses followed by salts; these and other similiar methods, it is true, do purge the patient thoroughly, but is this thoroughness necessary? Are the intestines any less troublesome in these patients than in those emergency cases that receive no catharsis? So far as I have been able to observe there is no difference. Are not these depleted patients in a weakened condition at the time of operation? How many present would consider for a moment taking from two to three grains of calomel or an ounce of castor oil twelve or twenty-four hours before a day's work involving great physical exertion, and a surgical operation involves great physical exertion.

If castor oil, perhaps the most common pre-operative cathartic, is used, the patient's bowels are completely emptied, and after operation the patient is constipated and usually distended by flatus, necessitating frequent enemata. From my observations the best pre-operative intestinal preparation is as follows: If the patient's bowels have been moving regularly or too frequently,

and most patients will come under one or the other of these conditions, they should receive no cathartic other than a simple soap-sud enema upon the morning of operation. Patients so treated are not weakened, are not predisposed to distention and occasionally have a normal bowel evacuation upon the day following operation. Post-operative catharsis I will consider later.

In considering the preparation of the field of operation it is hardly necessary for me to add a word of condemnation for the uncomfortable and filthy poultice no matter of what it is composed. Here again simplicity should be borne in mind. I have been associated with an operator who gets from 96 to 98 per cent primary union in all cases clean or infected at the time of operation, who has the patient receive a wet shave, for a dry shave he considers uncomfortable and unnecessary. The part is then cleansed with alcohol, 95 per cent, this being followed by ether; the alcohol and ether cleansing is repeated in the operating room. This method is simple, and simplicity should be our goal, and he has shown that it is efficient.

Primary union percentages are, however, dependent upon many factors besides preparation of the operation field. It is my belief that pre-operative hypnotics are of great value. Morphia gr.  $\frac{1}{4}$  and atropine gr.  $\frac{1}{150}$  given by hypodermic one-half hour or an hour before operation sends the patient to the operating room with his sensibilities obtunded and in that desirable state of mental neutrality which does so much to diminish shock.

In considering operative treatment I will mention only the following points:

First, anoci-association; second, abdominal incisions; third, abdominal toilet; fourth, closure of the abdominal wound.

I have seen Crile's theory of anoci-association as applied to nerve block used in something over a hundred cases, and I believe that this technic does greatly diminish shock, and because of this there is less nausea and distress during the early convalescence. It has, however, been well said that the larger part of any operator's attempt to diminish shock depends upon his ability to handle tissue gently.

As to abdominal incisions, I have been greatly impressed of late by the infrequent use of the transverse incisions in pelvic cases. There is no doubt in my mind that for gynecological work this is always the incision of preference. I do not refer to the Pfannenstiel incision with its wide sweep and crescentic curve, but to the Child method. This incision is made, as a rule, straight and in that fold of fat usually present just above the symphysis; a difference of an inch or two, up or down, is of no special consequence. The fascia is cut transversely to the

\* Read before the Alumni Association of St. Mary's Hospital, Brooklyn, N. Y., February 25, 1915.

limits of the skin incision which is, as a rule, about six inches long; the recti are separated and the peritoneum exposed, and here is a point of importance which I have heard emphasized only by Dr. Child: that there is found when opening the peritoneum in the median line considerable troublesome subperitoneal fat; if the peritoneum is incised an inch or two to either side, this is always avoided and the abdominal cavity entered directly. With proper retraction this incision gives an excellent exposure and can well be used even in cases of large myoma uteri.

The principal points to account for a large percentage of primary unions, as 96 to 98 per cent, are, I believe, perfect hemostasis, ligating every vessel that spurts, and clamping every oozing point; gentleness in handling tissues, cutting whenever possible, not tearing; the use of non-absorbable suture material, this point I will mention later.

In reducing abdominal trauma, I believe a very important point is the avoidance of the use of laparotomy pads either wet or dry. They are at best foreign bodies in the abdominal cavity; they are often too hot or too cold; and they always injure to some degree the integrity of the peritoneum. With a good incision and a proper Trendelenburg position laparotomy pads in pelvic work are, as a rule, unnecessary.

As to abdominal closure, the less absorbable suture material used the better. The Child transverse incision is closed by two strands of silver wire, using a continuous mattress suture in the fascia and subcuticular in the skin. Both strands are removed after fourteen days. We have all been educated to the overuse of catgut largely by the continual advertising of its manufacturers. The objections to catgut, be it plain or chromic, and the reasons for using silver wire in closing the abdomen are that catgut is difficult of sterilization, silver wire is simple of sterilization. The tensile strength of the silver wire never varies, the tensile strength of catgut frequently varies. Catgut during the period of absorption undergoes a softening which not only rapidly reduces its strength but forms an excellent culture media for bacteria. In an abdomen closed by silver wire the dreadful spectacle of the suture giving way and the intestines in the bed, and who has not known of such a case, is impossible. Another position in which non-absorbable suture material is often preferable is in the cervix uteri, for here chromic sutures are at times rapidly absorbed, and the operator may be notified in the middle of the night that his patient, operated perhaps a week before, is having a profuse vaginal hemorrhage. This is due to the softening of the suture material and consequent separation of the tissues. If silk-worm-gut had been used, this would have been impossible.

As to abdominal dressings, I have seen a method which may be new to some. The gauze is applied over the wound as usual, rubber tissue is used to cover the gauze completely, the adhesive is then applied in strips as usual. When the wound so dressed is to be inspected, the adhesive is easily turned back by cutting the dressing up the center and because of the rubber tissue the usual inconvenience of gauze striking fast to the adhesive is obviated. The gauze is easily removed, new dressings applied and the adhesive is laced up with tape, after cutting small holes along the edge. This dressing is most comfortable for the patient, permits most ready access to the wound, and is a most economical one for the adhesive need be applied but once.

As to post-operative factors: I am sure that as a general rule too little morphia is given during the first twenty-four or forty-eight hours post-operative. Just as at one time no water was allowed for twenty-four hours, then we became more humane and allowed hot water, so now we are becoming more generous and allow cool water in small quantities, if not vomiting, and I have never seen any harm from this rule. As to the use of morphia, I have often seen ten patients in the recovery room at night, five would receive morphia, gr.  $\frac{1}{4}$ , by hypodermic every six hours (S. O. S.) and five no morphia or perhaps codein in  $\frac{1}{4}$  gr. doses. The next morning the patients who had morphia were rested and comfortable, the others restless and anxious. I believe this should be the rule, not the exception. Sedatives in sufficient quantity to overcome post-operative pain are coming as did water for post-operative thirst.

As to post-operative catharsis, if the pre-operative catharsis has not been too strenuous, enemata once a day until the bowels move spontaneously will usually suffice. If not, I think the post-operative cathartic of choice is calomel gr.  $\frac{1}{4}$  every fifteen minutes for eight doses followed in three hours by a saline. This relieves any distension, gives the patient a sense of well-being and is not constipating as is castor oil.

To summarize:

Pre-operative factors: 1. Pre-operative mental neutrality. 2. Less pre-operative catharsis. 3. More simple pre-operative preparations. 4. Pre-operative hypnotics.

Operative factors: 1. Crile's anoci-association. 2. Avoidance of laparotomy pads and sponges. 3. Avoidance of absorbable suture material.

Post-operative factors: 1. Free use of morphia and cool water. 2. Calomel in divided doses on the second day post-operative.

I trust that I have not appeared too dogmatic in my statements. It has been my intention to present to you for discussion a few points obtained after careful observation in a large number of cases.

## NOTES TAKEN FROM MY FIRST FIVE YEARS' PRACTICE.\*

By PHILIP M. NEARY, M.D.,  
CORTLAND, N. Y.

LOOKING back with a perspective of twenty-five years, and attempting to recall a few of the many things that happened in my first five years in the practice of medicine, has been an extremely pleasant diversion for me. During these five years I was a typical country doctor, with "old gray mare." March 8, 1888, a piece of parchment printed in Latin was handed to me by a representative of the medical department of the University of the City of New York. It was, and still is, to me a precious piece of paper. April 26, 1888, I put all my goods in a buggy and pitched my tent in Union Valley, in the extreme eastern part of this county. My practice was not long confined to one county. This was due neither to skill nor reputation, but rather to location. The house in which I lived was so situated that the line dividing Cortland County on the east and Chenango County on the west passed between my bedroom and my dining-room. My location proved helpful in many other ways. In the fall of '88 I was elected one of the coroners of Cortland County and because of gallant and distinguished services I was re-elected in '91. I declined the third term on general principles.

I was located in the center of a circle over ten miles in diameter and therefore had about one hundred miles over which I was custodian of the health of the people. I was the "family doctor" in the sense that I was an essential part and parcel of every family. I rejoiced in their joys, and wept in their sorrows.

My first case proved fatal to the patient and almost fatal to the doctor. Again I was thankful for my fortunate location so near the county line. An officer armed with authority in my dining-room was without jurisdiction in my bedroom. This was comforting beyond description.

This patient was a prominent citizen about forty-five years of age. He had abdominal pain, and tenderness on pressure, more marked on the right side. He was tympanitic, vomited, and had a hard, incompressible, wiry pulse. It was a beautiful clinical picture of appendicitis, but this word was not a part of the vocabulary at that time. Peritonitis was my diagnosis. I had listened intently so recently to Professors Loomis and Flint of the University and Bellevue on the necessity of administering large doses of opium in the wiry pulse of peritonitis that I thought I was a true disciple of Aesculapius. In his dramatic manner Dr. Loomis used to hammer with clenched fist on the table and declare that nothing but "heroic" doses of opium would save

these desperate cases. He declared the respiration should be brought to ten or twelve per minute and that in some cases it must be brought to eight and held there for some time. In my zeal to imitate or follow the advice of these luminaries I brought my patient's respiration to zero and it remained there for all time.

I am no advocate of euthanasia, but it was some satisfaction to feel that while I could not save my patient, I at least robbed him of the throes of a painful illness, which even today must terminate fatally without the intervention of surgery.

Then the diagnosis was peritonitis and peritiphilitis, the treatment opium, the prognosis bad. Today the diagnosis is appendicitis, treatment surgery, prognosis good. This wonderful change in a very common disease or condition, all within the recollection of every man here. What a satisfaction to have lived and to have practised medicine during the last quarter of a century!

There was very little "race suicide" among these plain, pious and prolific people, and with my large territory I was constantly meeting new experiences in the obstetrical field, so you will bear with me if I mention a few. After I had been in practice one year my old friend and predecessor, Dr. Jerome Angel, paid me a visit and a compliment that I shall never forget. I showed him my birth-list and my death-list, and asked him to comment on my work. He replied: "There is but one man in Cortland County that can show a larger list of births, and no man can show a larger list of deaths."

My first confinement case was the wife of a Baptist minister. It was a perfectly normal case in every way. I was full of the horrors of "adherent placenta" and "concealed hemorrhage," etc. The child came into the world in spite of me, but the placenta did not—of course, it must be "adherent." We must not make traction on the cord or the uterus would become inverted. For hours I sat by my patient in the still, dark night with one hand over the fundus and the other everywhere. I now had a case of concealed hemorrhage. After several hours of agony to myself and my patient and all concerned, I became courageous and let the placenta come out of its place of detention where it had so long awaited honorable discharge.

For my skill and good judgment in handling this most difficult and complicated case I received the undying gratitude of the family. I was plumed knight and coronated by the community for my skill and heroism. Only last September I received an invitation to attend a wedding in Vermont, the bride in the case being the child that was born on this auspicious occasion. Gratitude was expressed lavishly to me because of the fact that early in my career as a physician I had saved both the life of herself and her dear mother.

\* Read before the Cortland County Medical Society, Cortland, N. Y., March 19, 1915.



The law of compensation is ever at work. The credit in this case compensated for the discredit in my peritonitis case. I deserved neither; I received both.

March 17, 1889, I was principal actor in some high-class vaudeville performance. I attended three confinement cases in as many different counties: one in De Ruyter, Madison County; one in Cuyler, this county; the third and last performance in Pitcher, Chenango County. The local scribe, in mentioning the event, wrote: "All the mothers and all the children are doing well, and the doctor has fully recovered." It was predicted by the prophets of the time and place that this event would pass down into history, and this prophecy has been fulfilled, for ever since that day, the seventeenth of March has been fittingly observed as Saint Patrick's Day.

Another case. One night at midnight I received a call on a confinement case three miles west. I started out with wind howling and mercury near zero. I had gone about one mile when my old gray mare left me in the cutter, she plunging headlong down a drift. The snowdrifts were so high and hard that the thills broke loose from the cutter. I left the cutter safely and securely deposited in the bank, and I seized the "Cauda Equina" and bade her go west.

This trip over the hills to the newly-born was not wholly uneventful. It was punctuated with frequent commas, colons, and at least one full stop. My faithful gray, blinded by the blowing snow and darkness of the night, plunged headlong from the end of a bridge into a creek, and at once the tandem order became reversed; I became leader, the "pale horse" again following in my trail. I arrived at my destination two hours later than the child.

Another obstetrical case and I am then through with my specialty. This was the unique experience of delivering a dead woman of a nearly dead child. The mother—a multipara—had mitral disease.

She was nearly through the second stage of labor when I arrived. She was having powerful pains. She had an anxious look, breathed rapidly, pulse bad, very restless. About two minutes before she died she said: "I am blind!" "I am dying!" "What is the cause?"

Another powerful pain and the head was born; and woman and pains were no more. I made traction and brought the child, or the balance of it, into the world—apparently dead. Long and faithful efforts at artificial respiration were rewarded in saving the child.

It was February and March of 1889, just 26 years ago, that influenza reached the territory in which I practised. Newspapers gave interesting accounts of this disease in Russia in the fall of 1888.

It spread westward, taking in large cities first, reaching London in December. In January New York was prostrated and Boston, Baltimore and Philadelphia about the same time. Buffalo and Chicago soon after, and it wended its way westward across the continent. Soon after it reached New York, then Syracuse and Binghamton, and in February, 1889, this city, at that time a village, was stricken. I was so isolated from the outside world that I wondered if it would reach me. Finally Truxton, Cuyler, and De Ruyter were visited by it and still none in my ride, but in March it swooped down upon us like a hawk upon its prey, and was no respecter of age, sex, color or previous conditions.

The aged, of whom there were many, were stricken with it, and many of these died after developing pneumonia.

Octogenarians and nonegenarians were very numerous in my territory and at least one centenarian was my patient. This was "Uncle Seabury" Brooks, as he was familiarly called.

Uncle Seabury died at the age of one hundred and one years. His centennial birthday was fittingly observed with appropriate ceremonies. He read in clear tones from Psalms, holding the book in his hand without a tremor. A very large class, each over eighty years, sang "Nearer, My God, To Thee."

Soon after this event I met my old friend and colleague, Dr. Nelson, of Truxton, in consultation. I mentioned the fact of so many very old people congregating on this occasion and asked him if he did not think their abstemious lives accounted for their longevity. He replied that he had no doubt that their simple lives, so close to nature, had contributed largely to their many years. He said he had had at least one centenarian in his acquaintance—an Uncle Topping of East Homer, who was said to have been one hundred and five years old when he died. I jokingly asked him what the cause of death was in Uncle Topping's case and he quickly replied, "Dissipation." "Yes," said he, "dissipation. He used whiskey and tobacco all his life to excess. He began using tobacco when he was five years old and used it one hundred years, and when he died it was hard to decide what it was that caused him to stop living, and it was surmised that the excessive use of tobacco for one hundred years might have been a factor in the cause of his death."

During the fall of 1888, an epidemic of typhoid broke out in the town of Truxton and in the little hamlet called Chenango. I had seven cases and lost one, and only wonder now that I did not lose more. All seven were desperate cases and complicated with hemorrhage or broncho-pneumonia. I had no nurse, nor did I see a nurse during my first five years of practice. Relatives, friends, and the doctor took turns in staying up nights and caring for the sick. This had been my predecessor's practice and I must

follow in his foot-prints. Quinine in antipyretic doses was the main medicinal remedy used in typhoid at that time. I used more quinine in this epidemic than I ever used since, all put together. The patients were all very deaf during the fever and it would be interesting to know how much of this deafness was due to the disease and how much to the quinine.

There were many cases of diphtheria during these five years; many died, and many of the survivors had paralysis following. Antitoxin was not yet used. A little later—about twenty-one years ago—I used the first antitoxin in this county. It was a pleasant surprise to me, to the patient, and to the friends. It was made in Germany. What wonderful, almost unbelievable things have been accomplished during these past twenty-five years in this one field, serum therapy! But with these increased wonders and possibilities have come increased responsibilities. Then, to lose a case of diphtheria did not hurt the physician's reputation or conscience; today, it hurts both.

Now, after reviewing the first five years of my practice, gleaning in a haphazard manner a few notes from my diary and comparing these notes with the notes taken from my last year's practice and noting the wonderful progress that has taken place during the intervening years, I cannot do justice to my feelings without saying we should all more fully appreciate the fact that we are today living in the beginning of the most wonderful epoch in the history of medicine, and the most important of all to the welfare of mankind—that of bacteriology and all that has grown and will grow out of it.

### THE RESULT OF A CAMPAIGN AGAINST VENEREAL DISEASES BY A PHYSICIANS' ORGANIZATION.\*

By PAUL B. BROOKS, M.D.,  
NORWICH, N. Y.

THE city of Norwich, N. Y.—it became officially a city on January first—is one of the most active and progressive little cities "up state." While the thoughtful element in Norwich believe that their community was never much worse than the average community similar in character and extent of population, for twenty years or more, prior to December, 1913, certain conditions existed which many decent people regarded as a blot upon the fair name of Norwich. With a population of about eight thousand, there were no less than seven active houses of prostitution, mostly fairly well segregated, in and near the city. Irregular prostitution was not at all rare.

Periodically there were half-hearted outbursts of protest. On one occasion a village president declared his intention to "clean house." He was a business man, highly respected, and not lack-

ing in courage; but somehow he was persuaded that the safe and sane course was that followed by each of his predecessors. And so, year after year, the Red Light District flourished, and its denizens grew more bold, in the belief that they were regarded as an essential element in the prosperity of Norwich.

During all these years the district contributed materially to the incomes of the local physicians. Illness was frequent among the residents, and they were invariably "good pay." Some of the houses paid liberally for medical examinations at intervals, but there was only now and then a physician who cared to add to his income by furnishing "health certificates" following these examinations. The madames had to content themselves with assuring their patrons that the girls had been "examined."

It contributed indirectly by supplying new cases of gonorrhoea and syphilis for treatment daily, and still more indirectly by keeping replenished the supply of cases of pelvic cellulitis, salpingitis, adult and infantile vaginitis, from among the wives and children of its patrons. The doctor who failed to get a new case of gonorrhoeal or syphilitic infection daily wondered at the "slump" in his practice.

For about a year, prior to December, 1913, there had been an "epidemic" of gonorrhoea so general that it was a subject of comment by laymen, who, however, failed to connect it in any way with the long established institutions in the Red Light District.

At about this time the members of the local physicians' club, at one of their meetings, fell to discussing the prevalence of gonorrhoea and syphilis in Norwich. When the experiences and observations of individuals were brought together, in the aggregate they presented a picture which was startling. There was no argument as to the source of infection; most of the cases could be traced directly or indirectly to the established houses, or to a few known irregular prostitutes. The condition of some of the women who had been entertaining from five to twenty patrons nightly almost beggars description.

Among the doctors of Norwich there were no "reformers"; they were just reasonably practical, average doctors. After consultation they did that which doctors are reputed to do but rarely; they agreed. After due consideration, covering a considerable period, the idea of palliative treatment was cast aside as of no avail. They advised radical treatment, and that it be applied without delay. Their recommendations included the elimination of the Red Light District and every professional prostitute.

Several meetings were held with municipal officials, and the question thoroughly discussed and re-discussed. Some of the officials, including the municipal attorney, favored immediate action; some were noncommittal, and some few actively opposed to any radical action. In the

\* Read at the joint meeting of the Medical Societies of the Counties of Chautauqua, Ontario and Seneca.

end, the officials voted that the district, which had been practically undisturbed for twenty years, should be wiped out. It was only necessary that the "management" of the various institutions be assured that the order to move meant business. Every known prostitute—and all of them were known to the police—departed to parts unknown, and at the end of a year none of them has returned.

From the day that the last resort was closed, there was an immediate falling off in the number of new cases of gonorrhoea and syphilis, variously estimated at from seventy-five to ninety per cent. Today, although it is obviously impossible to entirely eliminate irregular prostitution, new cases are extremely rare. There is apparently little, if any, increase in clandestine prostitution, rapes and assaults are no more frequent, and decent women and girls are safe, as they have always been, on the streets. According to the statements of physicians in the nearest village, eight miles distant, there has been a falling off in cases of venereal infection there during the same period.

While it is obviously impossible to draw conclusions from the results in Norwich as to what can or cannot be accomplished through the same measures in larger cities, it is the belief of the writer, based upon considerable observation, that the results depend much more upon the sincerity of the authorities than upon the size of the city.

Segregation, licensing and examination, as carried out in some European cities, is acknowledged to be a failure, at least in so far as the prevention of venereal disease is concerned. From all available data, attempts at segregation or regulation, in American cities, have been equally fruitless from the same standpoint, if not from every standpoint. It is a maxim in medicine that the rational treatment of disease lies in the removal of the cause. It being quite generally conceded that the public prostitute is the source of most of the venereal disease, the treatment is obvious.

In dealing with the prostitute, as a menace to public health, we must necessarily assume a somewhat selfish attitude. Until such a time as statewide action can be considered, each municipality must leave every other to fight its own battles. When the prostitute has been prevented from plying her "trade," she must then become a problem for the sociologist.

Physicians, as a class, are not much given to moralizing, or to fostering so-called "reform" movements. When bodies of medical men, with the courage of their convictions, and a willingness to give up "blood money" in the interest of public health and safety, cast off reserve and initiate a movement of this kind, it is the stronger for their reputed conservatism. We believe that what physicians have accomplished in Norwich they can accomplish elsewhere, and with equally satisfactory results.

## Notes from the State Department of Health

### THE CONTROL OF MIDWIVES.

The Legislature of 1913 in enacting the new Public Health Law gave authority to the Public Health Council to draft regulations for the control of the practice of midwifery. The Public Health Council enacted a series of such regulations in the summer of 1914, to take effect November 16, 1914, in New York State, except in the cities of New York and Rochester.

The Vital Statistics Law requires all midwives to be registered with the local registrar of vital statistics, and on November 16th there were registered with the local registrars 439 midwives.

Chapter IV of the Sanitary Code of the state authorized the Commissioner of Health to grant a license to a midwife prior to January 1, 1915, provided she could read and write, was not less than 21 years of age, was registered as a midwife, and her moral character was vouched for. Up to March 1, 1915, 273 midwives had been licensed by the State Commissioner of Health.

Since the first day of January, 1915, the applicant for license must also show constant evidence of cleanliness, and must possess either a diploma from a recognized school for midwives, or have attended under the instruction of a duly registered physician not less than fifteen cases of labor. The term of any license is limited to one year, and such license may at any time be revoked for cause.

Midwives are forbidden to use instruments, to prescribe drugs, or to take charge of any other than a normal case of labor, and are at all times to be subject to the rules and regulations of the Department of Health for midwives.

The rules and regulations drafted by the Commissioner contain a complete and detailed description of each and every necessary precaution to be taken in the management of labor to prevent infection. These regulations describe under what conditions of pregnancy a midwife must send for a physician, both during and after labor, and also outline conditions affecting the newly born which necessitate the sending for a physician. The regulations specify what equipment the midwife must have; that no instruments must be owned or used by her; that if any are found in her bag, house or on her person this constitutes a sufficient evidence for revocation of her license. The regulations provide further what antiseptics are to be used and what strength, and how prepared; the method to be used to prevent ophthalmia, etc.

There has been some criticism of this Chapter of the Code licensing midwives, especially on account of the waiver of examination for midwives now practicing. It must be obvious, however, to those who have given thought to the subject that the work of the midwife is of extreme practical importance among the poor of the state, especially among the foreign population in the larger cities, and it must also be evident that if an examination were given at this time practically no midwife would have sufficient theoretical knowledge to pass even the most superficial of examinations.

It must be further remembered that there is no satisfactory school of midwifery in New York State, except that conducted by the Bellevue and Allied Hospitals in the City of New York. The Examining Boards in Chautauqua, Niagara and Erie Counties and in the City of Syracuse have issued licenses, but have not exercised any systematic supervision of the midwives licensed.

The State Department of Health will supervise the work of midwives, and every licensed midwife will be under constant inspection by nurses of the Department especially qualified for this purpose, and any license fraudulently obtained or any midwife practicing in violation of the Sanitary Code or the rules and regulations for the practice of midwifery will, after a hearing, if in the judgment of the Commissioner such action be necessary, have her license revoked.

## Medical Society of the State of New York

### COUNTY SOCIETIES

#### MEDICAL SOCIETY OF THE COUNTY OF SARATOGA.

SPECIAL MEETING, SARATOGA SPRINGS, N. Y., MAY 27,  
1915.

The meeting which was held in the Homestead Tuberculosis Sanatorium, was opened by the inspection of the Sanatorium, followed by a luncheon. About twenty-six members were present.

#### SCIENTIFIC SESSION.

"The Scope of County Tuberculosis Hospital Work,"  
Edwin J. Kibbe, M.D., Cranesville.

"Some Experiences in Tuberculosis Hospital Work,"  
Horace J. Howk, M.D., Wilton.

Exhibit of Radiographs of Patients in Various Stages  
of Tuberculosis, Dr. Nebe, Mt. Gregor.

"Practical Problems in Sanatorium Work," Mont-  
gomery E. Leary, M.D., Rochester.

#### SCHUYLER COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, WATKINS GLEN, N. Y., MAY 6, 1915.

The meeting was held on the roof garden of the Glen Springs, and the following members were present: Drs. Kirby, Bennett, Quirk, Elliott, Bond, Clark, Clawson, King, Lyon, Norman and Zimmerman.

The following officers were elected for the ensuing year: President, Matthew L. Bennett; Vice-President, John M. Quirk; Secretary, Palmer H. Lyon; Treasurer, Frederick B. Bond.

Following the election, Dr. R. M. Elliott, Superintendent of the State Hospital at Willard, delivered an interesting and instructive lecture on the "Modern Classifications of Insanity," which was much appreciated. He invited the Society to visit the State Hospital and hold its next meeting there. The invitation was cordially accepted; and a vote of thanks tendered to Dr. Elliott for his courtesies.

After the adjournment of the meeting a collation was served by the Glen Springs, and a vote of thanks was tendered to the managers for the hospitality enjoyed.

#### JOINT MEETING OF MEDICAL SOCIETIES OF COUNTIES OF ULSTER AND GREENE.

CATSKILL, N. Y., TUESDAY, JULY 12, 1915.

Members were present from Gardiner, Kerhonkson, New Paltz, Port Ewen and Saugerties. There were about 70 members present from the Ulster County Society.

The meeting was opened by a dinner, which was followed by the business session, at which applications were received from Dr. Brown, of Allaben; Dr. Male, of New Paltz; Dr. Cranston, of Kingston; Dr. Haase (lately of Belgium) now of Kingston; Dr. Desmond, of Kingston, and Dr. Baker, of Kingston. No action was taken on these applications, as some were received too late for action by the Censors.

The address of welcome was given by the President, Dr. C. P. McCabe, of Greenville, and followed by an informal talk by Dr. W. Stanton Gleason, of Newburgh, President of the Medical Society of the State of New York.

#### SYMPOSIUM ON OBSTETRICS.

"Ante-Partum Obstetrics," Frank Keator, M.D., Kingston; John R. Gillett, M.D., Kingston.

"Post-Partum Care," Isaac E. Van Hoesen, M.D., Coxsackie.

#### MEDICAL SOCIETIES OF THE COUNTIES OF ALLEGANY, GENESSEE, LIVINGSTON AND WYOMING.

JOINT MEETING, LETCHWORTH PARK, N. Y., JULY 15, 1915.

One of the largest medical meetings held in Western New York in recent years was the joint meeting at Glen Iris, Letchworth Park, of the Medical Societies of the counties of Allegany, Genessee, Livingston and Wyoming. Over 300 guests were present. In addition to the members of the four societies there were others from Monroe, Erie, Ontario, Niagara, Cattaraugus, Steuben, Seneca, Schuyler, and Wayne counties. It was voted to make this joint meeting a permanent affair and to invite other counties in Western New York to join in making it a success at Letchworth Park, the President and Secretaries being delegated to make arrangements for a permanent organization. Part of the meeting was spent in visiting the many places of interest about the Park.

#### SCIENTIFIC SESSION.

"Cardio-vascular Renal Disease," Louis Faugeres Bishop, M.D., New York.

"Chronic Intestinal Stasis," William Seaman Bainbridge, M.D., 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 interests of our readers.

ESSENTIALS OF LABORATORY DIAGNOSIS, for Students and Practitioners. By FRANCIS ASHLEY FAUGHT, M.D., Director Laboratory of Clinical Medicine and Assistant Professor of Clinical Medicine, Medico-Chirurgical College, Philadelphia, Pa. Ten full page plates (four colored), and fifty-eight text engravings, fifth revised edition. Price, \$3.00 net. Philadelphia, F. A. Davis Co., Publishers. English Depot, Stanley Phillips, London, 1915.

SIMPLIFIED INFANT FEEDING, with 75 illustrative cases. By ROGER H. DENNETT, B.S., M.D., Adjunct Professor Diseases Children; Attending Physician Children's Department, N. Y. Post-Graduate Hosp.; Assistant Attending Physician, Willard Parker and Red Cross Hosps. Fourteen illustrations. Price, \$3.00. Philadelphia and London, J. B. Lippincott Co.

APPLIED IMMUNOLOGY, the Practical Application of Sera and Bacterins Prophylactically, Diagnostically and Therapeutically, with an Appendix on Serum Treatment of Hemorrhage, Organotherapy and Chemotherapy. By B. A. THOMAS, A.M., M.D., Professor Genito-Urinary Surgery, N. Y. Polyclinic Hosp.; Instructor in Surgery, University Pennsylvania; and R. H. IVY, M.D., D.D.S., Assistant Instructor Surgery, University Pennsylvania; Instructor in Genito-Urinary Surgery, Polyclinic Hosp., Philadelphia. Five colored inserts and 68 illustrations in text. Price, \$4.00. Philadelphia and London, J. B. Lippincott Company.

THE MEDICAL CLINICS OF CHICAGO, Vol. I, No. 1. These clinics will be devoted exclusively to Internal Medicine and will appear bimonthly, six numbers to a volume. 1915. Price in paper, \$8.00—cloth binding, \$12.00. W. B. Saunders Co., Philadelphia and London.

THE CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Vol. IV, No. LII. Octavo of 196 pages, 90 illustrations. 1915. Published bimonthly. Price per year: Paper, \$8.00. Cloth, \$12.00. W. B. Saunders Company, Philadelphia and London.

X-RAYS, How to Produce and Interpret Them. By HAROLD MOWAT, M.D., Edinburgh. Temporary Lieutenant, R. A. M. C., at present Officer to X-Ray Department Meerut Indian General Hospital; Radiographer to Metropolitan Hospital and Royal Chest Hospital. Price, \$3.00. London, Henry Frowde, Hodder & Stoughton, Oxford University Press, Warwick Square, E. C., 35 West 32d Street, New York City. 1915.

THE PREVENTION AND TREATMENT OF INFECTIONS. By OLIVER T. OSBORNE, A.M., M.D., Professor Therapeutics and formerly Professor Clinical Medicine Yale Medical School; Member Council on Pharmacy and Chemistry, etc., *Journal of the American Medical Association*, 535 N. Dearborn Street, Chicago, Ill.

THE INTERVERTEBRAL FORAMINA IN MAN. The Morphology of the Intervertebral Foramina in Man, including a Description of Their Contents and Adjacent Parts, with Special Reference to the Nervous Structures. Supplement to "The Intervertebral Foramen." By HAROLD SWANBERG, with an Introductory Note by Prof. HARRIS E. SANTEE. Illustrated by 11 original full-page plates. Chicago Scientific Publishing Co., Chicago, Ill., 1915. Price, \$1.75.

FIELD HOSPITAL AND FLYING COLUMN, being the Journal of an English Nursing Sister in Belgium and Russia. By VIOLETTA THURSTAN. G. P. Putnam's Sons, New York and London, 1915. Price, \$1.00.

### Book Reviews

THE OCCUPATIONAL DISEASES, THEIR CAUSATION, SYMPTOMS, TREATMENT AND PREVENTION. By W. GILMAN THOMPSON, M.D., Professor Medicine, Cornell University Medical College, New York City; Visiting Physician, Bellevue Hospital. Illustrated. D. Appleton & Co., New York and London, 1914.

This is an important work, inasmuch as it is the first modern treatise on the subject of occupational diseases and industrial hygiene by an American authority. It meets admirably the needs of American practitioners of medicine, as well as of those whose industrial, legislative or humanitarian interests call for a comprehensive summary of the nature and prevalence of the occupational diseases as they obtain in this country. It is an exhaustive treatise, in which the arrangement of subjects and the manner of discussion are wholly admirable. At a time when the profession's attention to the subject of the industrial and economic origin of disease is so keen, and when the medical man's duties and responsibilities in the premises are so patent, the appearance of such a work is matter of moment. We bespeak for this notable contribution a wide audience.

A. C. J.

RECENT STUDIES OF TUBERCULOSIS: A reprint of articles published in the *Interstate Medical Journal*, by Interstate Medical Journal Company, St. Louis, Mo., U. S. A., 1914, pp. 299.

This collection of reprints of articles published recently in the *Interstate Medical Journal*, while by no means new in its conception, nevertheless embodies some features that form a pleasing variety to the reviewer in the routine of ordinary medical publications. For one thing there is a diversity not only in the topics of the different papers, but in the authors' viewpoint as well, that one naturally cannot find in the more formal compilations of individual writers published separately. Then, too, there are some collateral topics such as Dr. Jacobson's contribution on "Tuberculosis and Genius," that by their freshness, originality and literary quality, afford a delightful variety. The range of subjects is altogether too wide to permit of detailed review and indeed some of the papers are too distinctly ephemeral to call for it, but the collection as a whole

is well worth reading not only by the man who is especially interested in tuberculosis—as who should not be—but by the medical public at large.

HENRY G. WEBSTER.

MEDICAL AND SURGICAL REPORTS OF THE PROTESTANT EPISCOPAL HOSPITAL IN PHILADELPHIA, 1914. Volume II. Philadelphia, W. J. Dornan, 1914.

Annual reports of the character presented by the Episcopal Hospital of Philadelphia are noteworthy contributions.

The systematic classification, analysis and publication of intelligently kept records is an invaluable asset in summing up the total achievements for the year. Such studies make for better organization. It gives evidence of the *esprit de corps* which exists in this institution. The heads of departments, themselves, abounding in enthusiasm for their individual branches in medicine and surgery have imbued their associates, assistants and resident internes with the habit of systematic study, analysis and preparation of cases for publication. All these contribute to this volume of 400 pages.

Many of the papers have previously appeared elsewhere in print and are based upon work done in the hospital. The table of contents includes a varied and valuable collection of articles in addition to the carefully classified and tabulated list of medical and surgical cases admitted and treated in the various departments during the year 1912-1913.

This type of work is of the greatest possible advantage to those who have compiled it—it evidences their advances and their failures. It is stimulating and instructive to others.

Among the notable contributions are: "The Episcopal Hospital in 1888 and 1912," by E. J. Morris; "A Review of 156 Consecutive Operations from the Surgical Clinic," by Dr. H. F. Frazier; "The Treatment of Burns," by Dr. J. V. Klauer (prize essay of the *New York Medical Journal*, August 2, 1913). A case of acromegaly is exceptionally well worked up by Dr. R. S. Hooker and serves as a model report.

Dr. Ashley Paston Cooper Ashurst's contributions are many. They are always interesting and valuable.

Much credit is due for this elaborate and painstaking work. It is a model year book. Other institutions would do well to review the work performed within their doors and could do no better than follow the example set by this hospital.

The writer hopes to have the pleasure of seeing the next volume when it appears.

ROYALE HAMILTON FOWLER.

A DOCTOR'S VIEWPOINT. By JOHN BESSNER HUBER, A.M., M.D., Editor, *The Dietetic and Hygienic Gazette*; Fellow American Medical Association and N. Y. Academy of Medicine. Gazette Publishing Co., New York City.

This book should win a wide audience, written as it is in the most charming style of the distinguished author. It is a doctor's view of our human relations and of our civilization. It discusses sanely and wisely those medical matters which are sadly garbled by journalists and magazinists, while at the same time it excels such writing in literary charm, which is saying a good deal, for whatever we may think of the distortion of facts on the part of lay writers, we must concede that many of them are past masters of the pen. While we have a Huber, the days of physicians possessed of literary gifts cannot be said to be numbered. It would be futile to attempt in this brief review an essay of the relative merits of the many papers which make up the volume. They must be read—will be read by the discriminating who are searching for that which is worth while among the avalanche of books. If the style is the man, readers will want to know Dr. Huber. A delightful acquaintance may be started by reading this book.

A. C. J.

DISEASES OF THE HEART. By JAMES MACKENZIE, M.D., F.R.C.P., LL.D., Ab. & Ed. F. R. C. P. I. (Hon.) Physician, London Hospital, Cardiac Department; Consulting Physician, Victoria Hospital, Burniey. Third edition. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York. 1913.

This book is so well known and has so great and deserved a reputation as the most important contribution in recent years to the literature of heart diseases, that extensive comment on it is unnecessary. This is the third edition. The greater part of the book has been rewritten. A special feature of this issue is an Appendix of eighty pages in which are presented ninety-two carefully worked out case reports, copiously illustrated with polygraphic tracings. E. E. CORNWALL.

THE HYPODERMIC SYRINGE. By GEO. L. SERVOS, M.D., Editor of *Nevada Medicine*. Member of the Nevada State Medical Association. Fellow of the American Medical Association. 317 pages. Cloth, price \$2.00. Physicians' Drug News Co., publishers, Newark, N. J.

The excuse for the presentation of this little work is the fact that Barthlow's volume on hypodermic medication is both out of print and out of the market. The author does not pretend to offer anything original. He tells the story of the hypodermis and its possibilities, as written by others. He attempts to disarm criticism in the preface wherein it is stated that probably many omissions will be found in the book. There is no place for mediocre work.

The book contains 313 pages and is divided into seventeen chapters. There are some typographic errors which will be corrected provided a second edition is issued.

Chapters II, III and IV are devoted to the syringe and its evolution to the present-day perfected all-glass instrument, technic and the enumeration of remedies which may be administered hypodermically.

Chapter V describes the therapeutics of these drugs. It is stated of atropine (to which he ascribes a very wide range of possibilities), that it may overcome strangulation in hernia. This is dangerous teaching. It is also recommended for relaxed genitals and lack of orgasm—in fact, almost as a panacea for all ills to which flesh is heir. He devotes a paragraph to condurangin, recommended for the cure of cancer. He rightly questions the desirability of employing heroin.

In Chapters VIII to XIII are described antitoxins, sera and bacterins. In the discussion of these he quotes very largely from certain "Working Bulletins" published by a manufacturer of these biologic products, written under dates, 1902 to 1911, years before the publication of the book under criticism. Hence, the material as presented does not afford the latest, best or most unbiased opinion upon these subjects. The subjects are treated in a lengthy, discussive manner.

There is much that has no place under the title of this book—for example, general management of cerebrospinal meningitis, etiology and pathology of hemophilia. A section is inadvisedly devoted to neoforams-bacterin. It is based upon the assumption of Doyen that this micrococcus is the specific cause of cancer.

The last four chapters are devoted to tuberculin, anesthesia, shock and syphilis.

Even if this compilation were summarized, and the editor's blue pencil used freely, the book could not be accepted as an authority.

It has been undoubtedly laboriously written and unnecessarily published. R. H. FOWLER.

THE PATHOGENESIS OF SALVARSAN FATALITIES by Sanitäts-Rat, Dr. WILHELM WECHSELMANN. Directing Physician Dermatological Department, Rudolph Virchow Hospital, Berlin. Translation by CLARENCE MARTIN, M.D., First Lieut., Late Clinical Assistant St. Peter's Hospital for Stone and other Urinary Diseases. The Fleming-Smith Company, Medical Publishers, St. Louis, Mo.

This work on the fatalities following the administration of salvarsan should be read by every practitioner

of medicine, for it emphasizes the fact that this new arsenical compound for the treatment of syphilis is not unattended with certain dangers, and that it should not be administered in a haphazard manner. W.

INTERNATIONAL CLINICS, A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Etc., by leading members of the profession. Edited by HENRY W. CATTELL, A.M., M.D. Twenty-fourth Series, 1914, Vol I. J. B. Lippincott Co., Philadelphia and London. Price, \$2.00.

The high standard of excellence exhibited in the previous publications of the *International Clinics* is well maintained in this volume. Many important and interesting topics are lucidly and authoritatively treated by the sixteen authors. There are twenty-eight illustrations, six of which are in colors. Seven of the articles are on treatment and therapeutics. Daniel M. Hoyt completes his very practical article on the treatment of the common poisons. There are two articles on surgery, four on medicine, and the progress of medicine during the year 1913 is recited by Cattell, Walk and Wilson. The last section is thorough, constituting about a quarter of the volume. Victor Vaughan has a particularly good article on an up-to-date topic—"The Importance of Frequent and Thorough Medical Examination of all Citizens." A. C. J.

THE MODERN TREATMENT OF NERVOUS AND MENTAL DISEASES. By eminent American and British authors. Edited by W. A. WHITE, M.D., Government Hospital Insane, Washington, D. C., and S. ELY JELLIFFE, A.M., M.D., Ph.D., Adj. Prof. Diseases Mind and Nervous System Post-Graduate Medical School and Hospital. Two octavo volumes, about 900 pages each, illustrated. Per vol., cloth, \$6.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913. Vol. 2.

On the whole the second volume of this series resembles the first but is an improvement on its predecessor, as the articles more closely correspond to the plan of the work, at least as to the subject of treatment. Beyond this, however, many of the writers do not attempt to cover its other aspects, and the hope that it will be of use in court has certainly not been as a rule obtained. As in its predecessor the articles present the latest theories of treatment, but it is a question whether some of these had better not have been omitted from such a work as this until their real value has been established. As a rule, the articles show a more careful preparation than in the first volume.

ARTHUR C. BRUSH.

## Deaths

PHILIP BRONK COLLIER, M.D., Kingston, died May 23, 1915.

ROBERT H. MACRAY DAWBARN, M.D., New York City, died July 18, 1915.

FRANCIS DELAFIELD, M.D., New York City, died July 17, 1915.

GEORGE J. DIRKES, M.D., Brooklyn, died July 18, 1915.

ROYAL JEROME EDDY, M.D., Glens Falls, died May 6, 1915.

JACOB H. FRANKENBERG, M.D., New York City, died July 27, 1915.

JAMES W. KNAPP, M.D., Canastota, died June 26, 1915.

ORRIN C. SHAW, M.D., Cassada, died June 28, 1915.

THEODORE WRITER, M.D., Otisville, died July 9, 1915.

# NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

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Vol. XV.

SEPTEMBER, 1915

No. 9

## EDITORIAL DEPARTMENT

### TWILIGHT SLEEP IN ITS RELATION TO THE GENERAL PRACTITIONER.

**I**N these comments it is our intention neither to condemn nor advocate the employment of Twilight Sleep in childbirth. The opinions of eminent obstetricians on the subject are so conflicting that every practitioner must determine its value by experience or observation. One fact stands rather prominently forth—obstetricians who have had large clinical experience are favorable to its adoption. It is well to bear in mind that innovations from accepted medical practice are at first, as a rule, received with optimistic enthusiasm by many would be progressive men, who publish results which from the experience of the more conservative never materialize.

It is to be conceded that the good results thus far reported have been under the most favorable environments, in hospitals where special preparations were made to carry out all the technical details of the treatment, and where capable assistants and nurses were in attendance.

Weigh also in the scale of reason before arriving at a conclusion, that if the same constant personal attendance given to these cases was

accorded to natural deliveries, the probabilities are that the statistical data now presented, favorable to Twilight Sleep, would undergo a change.

The drugs which hold so important an office in the management of this form of treatment are dangerous ones, and cannot be administered in repeated doses without compelling the closest observation of their physiological action, particularly that of scopolamine hydrobromide, the purity of which should be unquestioned. The effect of these narcotics upon the mother can be easily measured, but recourse to the stethoscope for the foetal heart sounds must be frequent. The profession would welcome with heartfelt enthusiasm any safe method of treatment that would render the travail of childbirth painless. The intensity of its value would be in its ease of application to all cases and the harmlessness of its character, attributes which are wanting in the treatment under discussion.

It is to be regretted that the subject has been enveloped in so much sensationalism in the public press. Its exploitation through that medium brings vividly to mind, the insistence upon the recognition of Friedman and his cure for tuberculosis. Harmful too, has been the propaganda

of self exploiting obstetricians and also of many zealous, but misguided women. The public through this agency has become imbued with the idea that Twilight Sleep is a dreamy, subconscious, painless labor from which the mother awakens to imprint the kiss of motherhood upon her newborn child. In verity it is not a painless performance. The narcotism produced by the drugs produces an amnesic effect, which upon its disappearance after delivery, leaves the mother under the impression that her labor was painless. In some instances the drugs have no effect upon the course of labor.

It is not known to the laity that this treatment is attended by greater danger to the child than natural labor; that the child is born in a state of suspended animation demanding immediate recourse to resuscitation at the moment of its birth; that the constant attendance of the medical attendant is imperative from the commencement until the close of the labor; that it in no wise lessens the danger of abnormal positions of the child in utero, or the difficulties to be overcome in distorted conditions of the pelvic outlet. Whatever the true status of the treatment may be it is not a twilight haze that affects the public mind regarding it but a cimmerian darkness.

Granting all the claims of the adherents of Gauss, to whom credit and honor is due, what will be the relationship of Twilight Sleep in practice to the medical man who sees possibly 75 per cent of all maternity cases—the general practitioner—the greater portion of whose practice is made up, if not directly, indirectly, of his obstetric clientele. His knowledge in the first instance is purely theoretical, the exigencies of his practice will not permit him to devote, to the exclusion of his other patients, the time requisite for a faithful observance of the technic. In the cities it will be almost impossible to surround his patient with that dim, soft, tranquil seclusion from the outer world, that we are told to believe is so important. Transit and traffic, the hue and cry of the streets, the social

pandemonium of the tenements, and to a lesser degree of the apartment houses will unite to frustrate his efforts in this regard. The economic condition of his patients in most cases will not permit them to bear the expense of the additional charge for his exclusive personal attention. He cannot expect to be successful with more than 50 per cent of his cases—disappointments result, and the odium of inefficiency is likely to be charged against him. To people of wealth, or moderate wealth, these objections do not apply. Living in private homes, in quiet portions of the city and able to commend the best skill, they are in a position to have every necessary requisite.

We believe that the treatment of Twilight Sleep has its field of usefulness! That its observance will be institutional rather than general. That its devotees will be found among the wealthy and the neurotic women. That its morbid influences are not yet known. That it will be practiced by obstetricians who can impress upon the public and their medical brethren, that they and they only know how to employ the treatment successfully.

\* \* \* \* \*

One of the first American women to submit to Twilight Sleep at the Freiburg Clinic and who afterwards became noted for her strenuous advocacy of its adoption recently died in the Long Island College Hospital from hemorrhage following child birth. The attending obstetrician was known as one of the strongest advocates in the country of Twilight Sleep. Considerable publicity was given to the woman's death in the lay press. The mutual faith of the patient and physician in the efficacy of this method of treatment aroused the suspicion that the expectant mother died a martyr to her faith, nothing was published confirmatory to this belief.

We are in a position to relate the following facts:

The patient had advanced to the eighth month of pregnancy. A partial placenta previa



resulted in several severe hemorrhages. It was decided to induce premature labor and she was removed to the hospital. The vertex presented and the child and placenta were delivered without difficulty. A most violent and uncontrollable hemorrhage followed and in spite of the skill of the attendant and his assistants the woman died upon the table.

The case opens up a field for speculation as to the effects of the drugs employed—scopolamine and morphine—upon the tonicity of the muscular structure of the uterus following delivery. It is a debatable question whether or not the partial narcotism could or would produce a relaxed condition of the musculature conducive to hemorrhage.

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#### “NEED NOT RISK AN OPERATION.”

**A**CCORDING to an opinion filed with the Supreme Court of New Jersey, an injured employee is not compelled to assume the risks of an operation in which death may follow, however slight that probability may be, in order that the pecuniary obligations created by the law in his favor against his employer may be minimized.

In this particular case an injured employee brought suit under the Workmen's Compensation Act to recover damages for injuries which resulted in loss of motion of the left hip. Should the employee be operated upon, it was said that he would recover in about six months, and if the operation were not successful he would be left in about the same condition as previous to the operation. Provided the operation was performed successfully the trial Judge decided the disability would be temporary. It was held, however, that injuries were permanent unless relieved by an operation, and that it was wrong to proceed under the theory that the injured employee should submit to the operation against his will.

\* \* \* \* \*

Another interesting judicial opinion was rendered by a “Justice” in the Supreme Court in

Brooklyn to the effect that the Workmen's Compensation Law is in part unconstitutional. Suit was brought against a manufacturing concern by an injured employee. In answer to the suit the employer set up the claim that the Workmen's Compensation Law prohibited the plaintiff from suing in the courts inasmuch as he had complied with the terms of the Act.

The plaintiff's attorney demurred to the answer contending that the Workmen's Compensation Law was unconstitutional. The Judge replying argued in a way favorable to this contention, but overruled the decision on the ground that the question was one of great importance, as serious consequences might follow the action of the trial term Court in interfering with this act of the Legislature, and that he preferred to have the Court of Appeals write an opinion of the unconstitutionality, if the law is not in accordance with the Fourteenth Amendment.

Excerpts from the Judge's opinion holding the law unconstitutional: “Can the legislature take away altogether the right to recover damages which a person sustains by reason of the failure of another individual to exercise reasonable care?” “Can the State deprive its citizens of all remedy for negligence? Liability for negligence is the governmental force used to keep society together. A man has a right under well organized government to be protected from the carelessness and negligence of others. A law which provides that no action could be maintained in the courts of the State for an injury done to real property would violate the Fourteenth Amendment.”

“I am strongly of the opinion that the Workmen's Compensation Act cannot be forced upon the employees any more than employers; that if there cannot be a compulsory act for the master, neither can there be a compulsory act for the servant; if the employer may elect whether he will come in under the Workmen's Compensation Act or stand by its common law liability, so can the employee.”

## Original Articles

## METABOLIC STUDIES IN DIABETES.\*†

By FREDERICK M. ALLEN, M.D.,  
NEW YORK CITY.

IN the work with diabetes at the Rockefeller Hospital, the principal problem has been one of treatment, rather than the study of metabolism as such. But the treatment has been based upon the conception of diabetes as the weakness of a metabolic function, and opportunity for some new observations concerning diabetic metabolism has been afforded by the method which clears up the symptoms of severe cases more quickly and radically than has been the practice heretofore.

In animals, total removal of the pancreas gives rise to an acutely fatal form of diabetes which differs in some respects from the form seen in human patients. But partial pancreatectomy produces a closer imitation of the clinical conditions.<sup>1</sup> The effect varies according to the amount of pancreatic tissue removed. There may be a simple lowering of the sugar tolerance without diabetes. Or, diabetes may be produced by sugar and prevented by omitting sugar from the diet. Again, diabetes may be produced by starch, and be prevented by partial or complete withdrawal of carbohydrate from the diet. Again, diabetes may be present on unlimited protein diet, and be checked by a few fast days and restriction of the quantity of protein. In a still more severe form, the diabetes is not thus controlled, and the animal passes into a fatal condition if these half-way measures are persisted in. Such an animal can be made sugar-free by a fast sometimes lasting weeks rather than days. It can then be kept thin and free from glycosuria on a very low diet. Increase of diet or body weight tends to bring back the glycosuria. The addition of fat to the diet can be shown to have this effect in suitable animals. Any influence which causes glycosuria, in any of the above types of animals, gives rise to a sequence of lowered tolerance, loss of weight, weakness, cachexia and death. Thus the course resembles that of a progressive fatal disease. But what is actually present is known to be the lowered functional power of a certain organ, produced by surgical removal of the greater portion of that organ. When this weakened function is not overtaxed, any of the above types of animals can be kept indefinitely free from downward progress, and they generally tend rather to improve slightly with time.

The existence of a large class of patients, whose diabetes is so severe that the glycosuria and acidosis are not abolished under any known mode of treatment, is familiar to all physicians, and is recognized by all authorities on this subject and not disputed by any writer so far as I

have ever seen. Naunyn, who was the great pioneer in the use of occasional single or repeated fast-days and slight temporary under-nutrition, recognized that stopping the glycosuria was the indispensable condition of checking the downward progress, but also admitted that in many cases this was impossible. Von Noorden and other writers are perfectly clear in similar statements. Magnus-Levy<sup>2</sup> forbids fast-days oftener than once in eight or ten days, and in very emaciated patients he opposes fasting altogether. Foster<sup>3</sup> describes the benefits of rigidly restricted diet and occasional fast-days singly or in series, the necessity of months of such treatment to rid the urine of sugar in advanced cases, and the general unfavorable prognosis for severe diabetes and the inevitable death in coma at last.

Concerning the application of the results obtained with animals to the radical treatment of human diabetes, the following points may be mentioned.

First, it seems possible, broadly speaking, to stop glycosuria promptly in any case of human diabetes. As much as eight or ten days of continuous fasting may be necessary for this result. Even very weak and emaciated diabetics have endured this program with apparent benefit. Infections and some other complications seem to delay the clearing up of the glycosuria. Contraindications have not been met, unless rarely if the fasting patient shows nausea and vomiting. It may then be best to terminate the fast and give restricted diet for a week or two, after which another fast easily abolishes the glycosuria. In one very severe case in a boy of seventeen, studied by Dr. Eugene DuBois in the respiration calorimeter, he found that the total metabolism was about 8 per cent above normal, and the patient was excreting all or practically all of the sugar formed from protein, and burning practically no sugar at all. In a nine days' fast, the glycosuria ceased, the total metabolism fell to about twenty per cent below normal, and the respiratory quotient showed that the sugar formed from protein was being burned.

Also, acidosis can apparently be controlled in even the severest cases. Fasting produces a slight excretion of acetone bodies in normal human beings, and it may seem a metabolic curiosity that fasting, without carbohydrate, should so markedly diminish diabetic acidosis. There is reason for believing that normal persons vary considerably in the ketonuria produced by protein-fat metabolism on deprivation of carbohydrate. Diabetics show similar, possibly greater variations in this respect; and the intensity of the diabetes or of the acidosis is not a reliable index of the stubbornness of the ketonuria. Some patients with apparently fairly mild diabetes, whose acidosis was never alarming and who easily become and remain sugar-free, still keep up a persistent ketonuria with a

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† From the Hospital of the Rockefeller Institute on Medical Research.

marked ferric chloride reaction on fasting, and on a diet low in fat and protein and containing an appreciable quantity of carbohydrate. This condition may be observed especially in the more obese patients. On the other hand, some patients with the severest diabetes, with extreme emaciation and with coma threatened or actually present, may show a negative ferric chloride reaction by the end of the long initial fast or within a few days thereafter; and they may then go along excreting mere traces of acetone bodies on strictest carbohydrate-free diet. It is possible that such patients have a naturally high power of burning acetone bodies, or that they developed an unusual power of this sort during their period of intense acidosis. The ideal treatment is to abolish ketonuria as well as glycosuria. If some patients continue to show the same physiological trace of ketonuria that a normal person might show on similar restriction of carbohydrate, this cannot be changed until continued treatment has raised the carbohydrate tolerance. But the procedure has been to keep on with fasting, with periods of very low diet, and with other periods of nothing to eat but green vegetables up to the limit of carbohydrate tolerance, as long as may be necessary to remove acidosis. It has been the rule not to increase the fat of the diet, or to begin building up the patient's weight and strength, until this control of the acidosis has been achieved. Under this program, the ferric chloride reaction has been made negative in every patient who has been under treatment for the necessary length of time.

A slight reduction of the patient's weight at the beginning of treatment in certain cases has been the practice of Naunyn and some later clinicians. But in general, these men as well as others have attempted to build up the weight and strength as much as possible, with the purpose of making the patient better able to withstand a wasting disease. It is unquestionable that loss of weight due to the diabetes itself, with continuous glycosuria and acidosis, is an unfavorable symptom, as has always been held. But the reduction of weight by fasting and low diet, so as to abolish glycosuria and acidosis, is an altogether different matter, and is an important initial step in the treatment, especially of severe cases. It is believed that this reduction of weight is in itself beneficial to the diabetic condition. It is not limited to the few pounds previously ventured, but is carried to any point that may be necessary to remove glycosuria and acidosis. In some instances a small reduction of weight suffices for even a severe case. On the other hand, one well-nourished patient, whose urine was easily freed from sugar, was reduced in weight to the extent of twenty kilograms, merely because of a slight stubborn ketonuria and a persistently high blood-sugar. Also, the reduction in weight is not temporary, as was the former practice. The patient is allowed to gain weight and strength, provided

he can do so without glycosuria or acidosis. If he cannot gain on these terms, he is not allowed to gain at all. As a matter of fact, almost every patient does become able to gain to some extent. This power of recuperation varies widely in different patients, and the apparent severity of the case is no safe criterion as to how fast or how far the lost function may return. But no patient is allowed to return fully to his original normal weight. He is required, by means of fasting and reduced diet, to keep himself below a certain number of pounds, which is prescribed on the basis of observations during his stay in the hospital. Anyone can easily convince himself that, in a severe diabetic who remains free from symptoms at a suitably low weight, both glycosuria and ketonuria can frequently be brought back by any attempt to raise the weight too high. Probably many failures in treating severe diabetes by the previous methods are due to this mistake; and the customary gloomy prognosis, and the belief that every severe diabetic relapses sooner or later, may perhaps be explained by therapeutic methods which have tried to maintain patients on carbohydrate-free diet at too high a level of weight.

The initial fast, to clear up glycosuria and diminish acidosis, generally presents less difficulty than the subsequent diet which must keep the urine normal and yet support life. Such a regimen has been sketched briefly in previous papers<sup>4</sup>; but the treatment should be carefully individualized to suit the needs of each patient, and details can be given only in a more complete publication to appear after the cases have been followed for a longer time. The difficulties of a severe case may tempt the physician to conclude that his patient cannot be kept sugar-free; that it is not possible on any diet. Certainly knowledge, care, and strict control are necessary in the management of any severe case, and undernutrition may be dangerous and harmful if wrongly employed. A skilled diet nurse is an important aid. The number of patients treated at the Rockefeller Hospital has been forty-two. Applications have constantly exceeded the accommodations, and choice has been made of the severest ones, with special preference for young, acute cases with coma threatened or present. When the glycosuria has been rapidly cleared up by the initial fast as described, it has subsequently been possible to keep the patient sugar-free in every case thus far. One feature of the diet in all severe cases is the restriction in fat and calories. Restriction of carbohydrate was the first dietetic treatment of diabetes. Restriction of protein has been practiced for years. But fat has ordinarily been forced upon the diabetic, and the best cook has been considered the one who could get most fat into the patient. Exceptions to the rule have been rare,—chiefly temporary limitations for patients threatened with coma. The prevalent doctrine has been that the diabetic must receive the number of

calories required by his metabolism, plus the number of calories lost as sugar and acetone bodies in the urine; and the best food for crowding in these calories has been supposed to be fat. There have been quacks who declared that as the diabetic loses sugar in the urine, this ought to be replaced by means of sugar in the diet. The accepted idea of replacing lost calories may be compared to this notion of replacing lost sugar. Both methods, in different ways, break down the weakened metabolic function and send the patient downhill. The opposite course is to clear up glycosuria and acidosis, and give the patient no more food than he can metabolize properly. The prevalent doctrine has been that fat feeding does not affect diabetic glycosuria, unless in a few "fat-sensitive" patients. The effect of fat is masked by the glycosuria and other symptoms present in the severest cases of diabetes under ordinary treatment. But when these symptoms have been cleared up, the influence of fat can be easily demonstrated. No clinical experiment is more simple and definite than to take a suitably severe diabetic who is symptom-free for days or weeks on a fixed diet, and to observe how the addition of certain quantities of butter or olive oil to this diet brings back the glycosuria, ketonuria and subjective symptoms immediately or within a brief time. The feeding of fat without other food does not cause glycosuria, and these experiments do not serve as evidence of the formation of sugar from fat. But they do show that forcing the body to dispose of fat beyond a certain quantity injures its power to dispose of carbohydrate or protein; and they thus perhaps indicate further causes of failure in the treatment of diabetes in the past.

Alcohol in the form of whiskey or brandy is generally given during fasting and often for a certain period thereafter, since in reasonable doses it does not cause glycosuria, and Neubauer<sup>5</sup> and Benedikt and Török<sup>6</sup> claimed that it diminishes acidosis. Its prolonged use is nearly always avoided.

Patients are kept comfortably warm at all times, and generally at rest in bed during the initial fast and sometimes during the period of minimum diet. Exercise without undue excitement is permitted in later periods. Its effect is still under investigation.

Since the new Benedict-Lewis method<sup>7</sup> affords a means for the accurate determination of the blood-sugar in ten minutes, this method has been used for frequent analyses, which show that the blood-sugar in some of the most serious cases has been brought rather quickly to normal. In other cases still under treatment, the hyperglycemia is stubborn, and further observations may show whether it is feasible or essential to insist on a normal blood-sugar in every case.

Drs. VanSlyke, Cullen and Stillman<sup>8</sup> have investigated the relations between carbon dioxide

tension in the alveolar air, carbon dioxide capacity of the blood, reserve alkalinity of the blood (measured by the hydrogen ion concentration after adding known quantities of acid), and clinical manifestations of acidosis. The parallelism between these various findings proves to be very close. VanSlyke's method for the carbon dioxide of the blood requires only ten minutes' time and rather simple laboratory equipment. The Fredericia<sup>9</sup> instrument for the alveolar air can be used at the bedside by any physician as easily as a blood-pressure apparatus; and it also seems to afford a reliable index of the acidosis. The blood and respiratory analyses have confirmed the clearing up of acidosis under treatment.

Finally, the clinical and subjective condition of the patients is a natural subject of inquiry. No patient has yet refused to take the treatment. Even very weak and emaciated patients have borne the treatment well. Of forty-two patients, seven are dead. In view of the character of the cases taken, this record is satisfactory, for it includes not only coma cases but also pulmonary, cardiac, and other conditions aside from the diabetes. Two patients were discharged for violations of discipline not pertaining to diet; one of these is included in the above list of deaths. The other patients are free from glycosuria, and are subjectively improved in greater or less degree. Those leaving the hospital are taught to test their urine with Benedict's solution<sup>9</sup> and to manage their diet and weight so as to keep sugar absent. Relapses thus far have not been numerous nor serious, the longest period of observation being fourteen months. No complication has appeared in any patient under treatment. Existing conditions such as excessive hunger and thirst, pruritus, neuralgia, and functional eye troubles have disappeared. Carbuncle and gangrene (one case each) have likewise cleared up promptly, and operative or other dangerous complications are considered an indication for the radical treatment. Albuminuria has cleared up in some cases; in other cases with possible organic kidney trouble it has not cleared up. No patients have needed alkali for more than a few days. Gastro-intestinal troubles are absent. The intense craving for carbohydrates on the part of diabetics has probably in the past been due to the over-heavy protein-fat diet, and this has given rise to the unjust opinion that diabetic patients cannot be trusted. At first there is the natural hardship of breaking up a person's established habits as respects both kind and quantity of food. But the patients have quickly become contented on their new diet and have followed it conscientiously because of the improvement which they feel. Even those whose weight has been markedly reduced feel improved strength and well-being. The degree and rapidity of improvement up to the present has varied widely in different cases. Exceptional patients have, from a condition of serious danger, come

rapidly back to the feeling and appearance of perfect health, with merely the inconvenience of care in diet. Exceptional patients at the other extreme have shown little recuperative power. Some of these latter remain thin and weak because the diet must be kept low. Others of this class complain of weakness and other symptoms, though the diet is theoretically adequate and the nutrition apparently good. The chief benefit to these patients is that they now seem to be holding their own or slightly improving, whereas previously they were going down hill. The majority of the results fall between these two extremes. The majority of patients have been decidedly improved in strength and well-being, but have not been able to regain fully normal weight or strength. In some of them, the improvement seems to go on continuously. In others it is at a standstill, or is so slow that years will be necessary for appreciable gain. The encouraging feature is that the average tendency seems to be more upward than downward.

The principal theoretical question involved is whether diabetes is an inherently progressive disease, or whether it is the simple weakness of a metabolic function. If it is the former, the patients must go downhill ultimately, just as ordinarily predicted for severe diabetics, and the only benefit of treatment will be to prolong their lives and make them more comfortable. If it is the latter, downward progress may be indefinitely prevented by avoiding over-strain of the weak function, just as in animals. Previous experience in the treatment of diabetes does not decide this question. For one thing, the proposed new treatment differs from the old in being more radical and thorough, and the difference between the partial and the complete clearing up of a diabetes may be comparable to the difference between the partial and the complete extirpation of a carcinoma. For another thing, the proposed treatment directly reverses the previous practice in certain points; in particular, it contradicts the prevalent beliefs that the diabetic should be fed up to keep his weight high, and that calories lost in the urine should be replaced in the diet, and that unlimited fat feeding is beneficial and does not influence diabetic glycosuria. The severest cases may not be suitable for a decisive test. The function in some of these patients may be so weak that an over-strain is involved in keeping them alive at all, and thus they may finally progress downward. Time and further experience alone can decide. Meanwhile, the true opinion is not that of the pessimist who considers everything useless, nor that of the optimist who expects miracles, but it seems to lie somewhere between. Granted that diabetes is merely the weakness of a metabolic function and its most dangerous symptoms can be rapidly removed by relieving over-strain, yet the fact of this weak function must be faced. The patient has, so to speak, a defective boiler, and it seldom

again becomes able to stand a full head of steam. The best prognosis in diabetes, and the greatest reduction of the mortality, will come when the average general practitioner takes the methods which have proved their value in severe diabetes, and applies them so as to control the cases that are yet early or mild. In such cases there is cause to hope that prompt thorough treatment will save the weakened function before it becomes too weak, and that the patient may then go along on moderately guarded diet and slightly reduced weight, with not only his life but also his usefulness preserved. The most advanced and distressing stages of a number of medical and surgical conditions, which were common enough in former times, are now rarely seen, because treatment is applied in the earlier stages. The number of patients who are seen in the last, most desperate stage of diabetes is still very large, and the most hopeful prospect for therapy cannot lie in attempts to cure patients at this stage. It is to be found rather in a more general recognition of the duty of stopping glycosuria and the feasibility of doing so, in better instruction of patients, and in the use of thorough and efficient measures at the earliest possible stage of diabetes.

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#### Discussion.

DR. E. L. EGGLESTON, Battle Creek, Mich.: I should like to report a case that may be of some interest in this connection. Three months ago a patient came under my care suffering from an acute infection of the gall bladder probably associated with gallstones. His condition was such as to contraindicate operation at the time, and he was treated medically. The infection promptly subsided and recovery was uneventful.

At this time he had a careful analysis of the urine on two different occasions. There was no indication of any pathological changes with the exception of the presence of bile. His specific gravity was below 1.020 on both occasions. After a short time he returned to his home resuming his normal life. About ten days later he was attacked by a severe frontal headache which persisted with great severity for some ten days. About this time he returned to me for further observations. His headache had subsided, but he was in a rather nervous condition, was passing large quantities of urine and was suffering from great thirst. Analysis of the urine at this time revealed a specific gravity of 1.042, the quantity of the urine was 4800 cc. in the twenty-four hours, and there was more than 400 grams of sugar with 0.423 grams of acetone. A regime similar to that just described by Dr. Allen was instituted, except that instead of resorting to an absolute fast, he had frequent green vegetable days. The glycosuria promptly disappeared and within a period of two weeks he was entirely sugar-free and his ketonuria had entirely subsided. During this period of treatment it is strange to note that while the total calories of the diet never exceeded 1,400 and usually ranged from 800 to 1,000, he lost only two and a half pounds in weight. This, it seems to me, proves quite conclusively that we should not hesitate in these cases of diabetes to reduce the diet in the beginning of treatment to the minimum, and we should not make the mistake of attempting to replace carbohydrates by an excess of protein or fat until the tolerance for these two classes of foodstuffs has been as accurately determined as the toleration for carbohydrates.

I have been working along the line suggested by Dr. Allen for some time, and the results have been very gratifying. In some severe cases I have not been able to keep them entirely sugar-free as the loss of weight and strength has seemed rather to contraindicate such drastic measures. After listening to Dr. Allen's paper today I shall feel safer in persisting in the more drastic regulation of diet. In the less severe cases the results have been all that could be desired; the patients have been relieved of their glycosuria and ketonuria, and in some instances the carbohydrate tolerance has been so markedly increased as to allow of almost a normal carbohydrate ration. I am sure that Dr. Allen's work will be of inestimable value to the medical profession in the effort to combat this unfortunate disease.

DR. JOHN M. SWAN, Rochester.—I have been much interested in Dr. Allen's former publications on this subject. I should like to adopt the methods of our friends of the legal profession and propose an hypothetical case to Dr. Allen.

In January, I was consulted by a man, aged 55 years, who was complaining of dyspnea. He weighed 238 pounds, the overweight for his age and height being 86 pounds. He had an hyper-

trophied heart with accidental murmurs; an auricular fibrillation, which was confirmed by polygraphic tracing; a systolic blood pressure of 235 mm.; a urine output of 760 cc. in twenty-four hours, which contained 1 per cent of albumin by the Tsuchiya method, hyaline and pale granular casts and uric acid. After being under treatment appropriate to this condition for two weeks the total quantity of urine increased to over 2,000 cc.; the specific gravity was 1.017; the albumin percentage was 0.22 (Tsuchiya). The urine was then found to contain 2.066 per cent glucose, corresponding to an excretion of 44.2 gm. in twenty-four hours. An important element in the treatment, as originally planned, was lactovegetarian diet. Is this a case of diabetes mellitus? Would it be wise to starve such a patient?

### THE TREATMENT OF FIBROIDS OF THE UTERUS BY THE X-RAYS.\*

By GEORGE E. PFAHLER, M.D.,

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THE treatment of fibroids by the X-rays is no longer in the experimental stage, but instead it is recognized especially in Europe as a valuable means of treatment and one to be taken into consideration in most cases. I treated my first patient in January, 1906, therefore my own experience covers a period of over nine years. Cases have been reported by me in previous papers,<sup>1</sup> together with a review of the theory of the action of the rays; and the modern technique was described before the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association in June, 1914.<sup>2</sup> There are hundreds of scientific communications and even books written upon the subject, yet there remains in the minds of the members of the profession many doubts and fears which prevent the proper development of this valuable method of treatment in America such as has been accomplished in Germany and France. The object of this paper will therefore be to answer some of the queries that naturally arise in the mind of every practitioner when he must recommend the best treatment for the best interests of the patient.

During the past nine years there have been treated probably between two and three thousand patients of the class under consideration. Gauss<sup>3</sup> made a statistical summary of 1,395 cases that were recorded up to January 1, 1914. Lockyer<sup>4</sup> from the records of only seven authors collected 1,572 cases. If Lockyer is able to collect this number from seven authors it is reasonable to assume that there must be practically twice this number on record. He remarks that almost

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 29, 1915.

every article indexed "Myome" during the previous seventeen months in the *Zentralblatt f. d. g. Gynaekologie u. Geburtshülfe* related to radiotherapy, and in Germany and France the method of treatment seems to be accepted as one to be considered in every case. It is, therefore, no longer a new and untried method, and if the bad results of treatment, subsequent degenerations and serious complications were as prolific as a result of the treatment as some of the authors (Tracy<sup>5</sup>) (McGlenn<sup>6</sup>) seem to think we surely would have met them long before this and would have abandoned the treatment.

The indications for the treatment of hemorrhages due to *myomas*, as given in my recent paper,<sup>2</sup> are: 1. All cases of myoma in older women in whom there is already a well-advanced anemia, which may be the cause of an anemic heart. 2. All elderly and young women with myomas, in whom there is marked organic heart-disease, diabetes mellitus, chronic nephritis, marked lung-disease and goiter with cardiac symptoms. 3. All patients beyond the age of 40, in whom there is no contra-indication to the treatment, the intramural or interstitial variety gives the best results. In general, the older the patient and the nearer she has approached the menopause, the more prompt and satisfactory will be the result. Under 40, Roentgen therapy is not the method of choice, but good results can be obtained, though the younger the patient, the more treatment will be required. Even in patients under forty, if the alternative is complete extirpation of the uterus and adnexa, Roentgenotherapy should be seriously considered, for it is claimed that even with the disappearance of the graafian follicles and the destruction of the reproductive functions that there is a preservation of the internal secretion.

Evidence of the preservation of the internal secretion is also obtained by analogy. In the early experiments upon guinea pigs by Albers-Schönberg, the general behavior of the guinea pigs that had been exposed to the rays was the same as the control pigs. Copulation took place, but there were no offspring.

Likewise the investigations of Brown and Osgood showed that most of the early Roentgenologists were rendered temporarily sterile, yet none were rendered impotent, and all preserved their normal activity and interest in life. (Many that were sterile for a number of years, have regained their virility after instituting proper protection.)

Therefore if the internal secretion of the testicle is preserved when the male is rendered sterile it is safe to assume that the internal secretion of the female is preserved when she is rendered sterile by similar treatment.

It is also possible that there will be a regeneration of the ovaries in young women, with the possibility of subsequent menstruation. This has occurred in one of my patients, a woman of thirty-four, in whom, after all the symptoms of

fibroid had disappeared and after complete cessation of the menstrual period for several months, there was return of normal menstruation which has continued normal for about five years, and now is gradually diminishing. During these five years she has enjoyed excellent health. This possibility should, therefore, be kept in mind. Edelberg<sup>7</sup> reports a case of myoma of the uterus in a woman of thirty-eight. Six years after her second pregnancy she was given a course of Roentgen treatment, the ovaries being systematically treated, the total dosage being 146 Kienboeck units. It is estimated that 111 X-units were given before pregnancy and 35 X-units after pregnancy, but the pregnancy proceeded unmolested to normal term and the child seemed absolutely normal and thriving at the seventh week.

Gauss<sup>3</sup> believes that all cases of myoma should be treated by radiotherapy, because the lowest mortality ever claimed for operative methods is from three to five per cent, while in his second and third group, in which the doses were from 175 to 1,500 X-units, there were no deaths. He thinks this alone should justify the treatment.

Krönig<sup>8</sup> says his clinic has abandoned the operative treatment of fibroids for the treatment by the Roentgen rays, except in those occasional cases where it appears that myomectomy may leave a functioning uterus for a young woman. The argument is that the Roentgen rays are just as efficient in their action as total ablation and is devoid of all danger to life, while an operation carries with it an operative mortality even if it is small. The artificial menopause symptoms are in general not nearly so pronounced as after operation.

*Contra-Indications.*—1. All cases of myomas in which the tumor is pedunculated, or which can be excised without destroying the reproductive powers of the patient. 2. Fibroids that are believed to have undergone malignant degeneration, or that have become gangrenous, or that have become infected, should not be treated. 3. Fibroids associated with disease of the adnexa. 4. Fibromas which are producing such marked symptoms that the patient is endangered more by waiting two or three months for results of Roentgen therapy, than by the result of an operation.

*The Probability of Cure.*—In the critical reviews made by Gauss, he divided the 1,395 cases into three groups, according to the dosage given. The first group embraces a total of 693 cases, in which the total dosage amounted to from 50 to 175 Kienböck's X-units. Group 2 included 544 cases in which the doses varied from 175 to 500 X-units. Group 3, included 158 patients, who were given doses amounting to from 500 to 1,500 X-units. Corresponding to the rise of the total doses in the three groups there is a rise also in the percentage of cures from 72 to 82 and 95 per cent. It can be seen from this that the success attained is greater in proportion to the

dose of radiation applied to the surface of the body. To this, however, must also be reckoned the fact that in addition to the increase of the dose, the rays applied in recent years have been more penetrating and more thoroughly filtered. In group 3, so far as he was able to learn, practically all of the cases of myoma and metropathy that presented themselves for treatment were treated; at least this was true at the Freiburg Clinic. Therefore, since all variety of cases in group 3 were treated the results must be due to the improvement in technic. In group 1 there was evidence of recurrence in four per cent, in group 2 of three per cent, while in group 3 there was no recurrence to record.

It must always be borne in mind that the younger the patient the more treatment will be required. In hemorrhages due to fibroids I believe it is always desirable to bring about at least a temporary menopause. When the patient is treated from any necessity during the child-bearing period it will sometimes be an advantage to secure only a temporary cessation of the menses, for it is generally recognized now that the action of the rays is on the tumors as well as on the ovaries. I believe we will find it possible to cause the disappearance of the tumors without actually destroying the action of the ovaries. Fraenkel,<sup>9</sup> referring to the treatment of young women, has seen repeatedly amenorrhea produced for a few months, then the patient become pregnant and give birth to perfectly healthy children.

*Modern Treatment* is today given in series, each series of doses being separated by an interval of three or four weeks. The menstrual period following the first series of doses is generally uninfluenced, and unless given within ten days preceding the period will probably not be increased. The second period is usually diminished, and the third is usually absent. Therefore one can never judge results inside of two months, and I usually count on from three to six months for the cure. By using the very large doses described by Gauss the duration of treatment can be reduced, but I can see no advantage, and some disadvantage, in bringing about a rapid menopause.

#### THE TUMOR.

The tumor is the last to disappear. From a study made in a previous paper<sup>2</sup> I found that 75 per cent of the tumors had disappeared, but from the fact that in the early cases treated there was a progressive disappearance of the tumors after discontinuing treatment, I am led to believe, but not yet able to prove, that they will probably all disappear. The fourth case treated was a patient forty-nine years of age, who had a tumor which extended to the umbilicus at the beginning of treatment, at the end of a year it was the size of a grape-fruit, and at the end of the second year it was the size of an orange, and when last examined, five years after begin-

ning treatment, which is now about four years ago, the tumor had entirely disappeared.

*Subsequent Degeneration of the Tumor.*—The fear of subsequent degeneration of the fibroid has been aroused by a number of men,<sup>10</sup> both in personal conversation and in literature. If this were a great likelihood it surely would have developed long before this. This treatment has been in use nine or more years, and the early work was done very much less satisfactorily than it is done today, and yet there is no definite records of any such degeneration. Nordentoft<sup>11</sup> remarks in July, 1914, that he has been unable to find on record any evidence of malignant degeneration in the relics of a myoma or fibroma that has retrogressed under Roentgen treatment. There have appeared, however, two or three cases in which malignancy has been discovered during the course of treatment, which had not been discovered previously, and in one instance made itself evident in a case that had not responded completely to the rays (Shoemaker<sup>12</sup>). Haenisch<sup>13</sup> reports one case of unrecognized carcinoma. When one considers the frequent occurrence of carcinoma it is rather remarkable that only so few have shown the development of carcinoma during the course of treatment, for Freund, referred to by Nordentoft, found malignant disease in the uterus or ovary in 6 per cent of 500 myoma cases, Klein in 7.7 per cent of 491 cases, and Mackenrodt in 7.7 per cent in 418 cases. Tracy (referred to by McGlenn<sup>6</sup>) found it in 10 per cent of his cases. Therefore, if no cancer has developed in over 1,575 cases that have been treated long enough at least to be placed on record, and among which with a percentage of 7 per cent there should have developed over 100 cases of malignant disease if they had been untreated, it would seem to me a rather strong argument in favor of treatment, from the fact that only two or three cases have been recorded in which malignant disease developed during the treatment, or one-fifth of 1 per cent. Since there is apparently 99 or more per cent less carcinoma in the number of cases treated by the Roentgen rays than are found in the general average, it would suggest very strongly that the rays have a beneficial influence in the prevention of malignant disease or in the cure of early cases of malignant disease. It is true that the most of these cases treated were more or less selected, and carcinoma reasonably eliminated, but in the cases of the Freiburg Clinic, at least, and probably in many others, all patients who applied were treated. Therefore, if we are limited simply to the last 195 cases reported from the Freiburg Clinic there should have been in the ordinary course of events, approximately 15 cases of malignant disease develop. There is no record of any such degeneration.

Most patients treated have been more or less under the observation of gynecologists and it is not likely that many cases of carcinoma could have developed, following Roentgen treatment,



and not have been reported. It seems, therefore, that the fear of subsequent degeneration is entirely without foundation.

#### THE DIFFICULTY OF MAKING AN ACCURATE DIAGNOSIS.

This is an objection that has been raised by most gynecologists, and on the basis of this difficulty and on the statistical basis of the complications that are liable to arise with fibroma of the uterus, a number of papers<sup>5-6</sup> have been written strongly objecting to the Roentgen treatment. While most men have advised against the treatment of any cases with complications it does not follow that all these cases with complications are going to die, provided that they are treated with the rays. The statement is often made that it is not the preferable treatment, but it is entirely unfair to assume that any such large percentages of these cases will die, for if carcinoma of the pelvis can be made to disappear after it has recurred, following an operation, and if inoperable cases can be made operable or the disease can be made to disappear, as I shall show later, it is surely fair to assume that these early unrecognizable carcinomas may also disappear. Therefore it seems to me an unnecessary fear to be aroused in patients in whom Roentgen treatment has been advised. If complications were as dangerous to the patient as has been indicated, surely many of these 1,500 or more patients already recorded would have died and we would know of it. Gauss found death in only half of one per cent in the first group of cases treated, which involved incomplete and undeveloped technic, and no deaths at all in the second and third group, while under operation the operative mortality is at least two or three per cent, and recurrent mortality even greater.

The action of the rays is effectual on other than the ovary and fibroid. In 75 per cent of all cases where there had been adhesions of the genital organs, Fraenkel<sup>14</sup> found they had improved or entirely disappeared after Roentgen treatment. Firmly fixed uteri became movable, thick bands in the parametrium became softer and less prominent, and bands in Douglas' pouch could no longer be felt when placed under tension. In one case a firmly adherent ovarian cyst became movable. He explains this retrogression of adhesions under Roentgen treatment as being partly mechanical, the myomata as they decrease in size losing the adhesions by traction. In other cases it must be admitted that there is a reduction of the adhesions by the direct action of the Roentgen rays. This was particularly true in adherent uteri and peritoneal tuberculosis, and, in some cases, the retrogression of the adhesions was confirmed on laparotomy.

#### COMPLICATIONS ARISING DURING TREATMENT.

There is nothing to prevent an operation if a complication arises during the course of treatment. Generally the patient's hemorrhage will have been controlled, she will be less anemic, and

she will stand an operation better than at the beginning. In one of the cases which I have treated, the patient had been extremely anemic from hemorrhage, the fibroid extended to the umbilicus, amenorrhea was produced and the tumor was reduced to the size of an orange, when she developed symptoms of pelvic abscess. This demanded an operation, which was done at a time when the patient was in much better health than at the beginning, and as a result she recovered completely. There was no trouble in the healing of the wound, and the preliminary X-ray treatment had done nothing but good.

In a more recent case of a patient referred to me by Dr. McGlinn, the patient had symptoms of pelvic abscess at the beginning of treatment. Dr. McGlinn considered resection inadvisable and treatment was begun. Within a week after the first series of doses were given the abscess showed signs of pointing in the vagina. This was incised and drained by Dr. McGlinn, which was a simple operation from which the patient made a good recovery, and she is responding to the X-ray treatment in the usual way.

#### POSSIBLE DANGERS FROM THE TREATMENT.

*The Skin.*—In all Roentgen therapy our first thought is the skin, for the great proportion of the rays are absorbed in the skin and the superficial layers of the tissues, therefore we are limited in the quantity of rays that can be given through any particular area of skin. This had led us to divide the areas, as much as is necessary, so as to get a deep effect by cross-firing, which is nearly or quite equivalent to the effect in the superficial tissues. With good technic, the use of hard rays, filtration by at least three mm. of aluminum and a layer of sole leather, there should be no ill effects on the skin, beyond pigmentation, which disappears and is not objectionable. The degree of pigmentation will vary with the complexion of the patient treated. Dark people show more pigmentation than others, those of light complexion are apt to show slight redness instead of pigmentation, but a real dermatitis should always be avoided. The pigmentation will disappear just like the tanning from the sun. Fortunately the ovaries and tumor tissues are more sensitive to the rays than the skin, and therefore one can obtain results without damage to the skin.

*Visceral Effects.*—The possibility of damaging the other viscera has been raised both by gynecologists and roentgenologists. In a few instances diarrhea has been recorded in literature which lasted for a day or two after the treatment, but this probably is a constitutional condition if due to the treatment at all, concerning which I shall speak later. Accidental diarrhea occurs so commonly, and especially in the neurotic, that it can easily be described to any new procedure. There has never been any intestinal irritation in my patients. In two cases of mine

slight bladder irritation developed, which lasted a few days, but in one of these, at least, the patient had been subject to this bladder irritation at intervals before this treatment had been instituted. Therefore, I believe it is of no serious importance.

*Constitutional Symptoms.*—Since we have been using these massive doses, and giving a great many doses in a short time, a number of patients have complained of lassitude, nausea, and sometimes vomiting, which lasts a day or two and occasionally three. At first this was thought to be due to an effect upon the ovaries, but I have seen it also in extensive breast treatments, in the treatment of a large sarcoma of the hip and in the treatment of carcinoma of the liver in a man. I believe these effects are due to the inhalation of the gases which are generated in the neighborhood of the high tension currents. This is noticed now because of the multiplication of doses given on one day and also because the more penetrating rays now used require a much higher voltage, which gives more brushing from the machine and wires. I am making some investigation along this line and believe that I am gradually eliminating these constitutional effects. I hope to make a more complete report of this subject at a later date.

*Menopause Symptoms.*—The symptoms associated with the production of an artificial menopause have at no time been severe, and they consist chiefly of flashes of heat and occasional headaches. In some cases these have been practically absent. Krönig says that the symptoms of an artificial menopause are very much less severe after Roentgen treatment than after operation.

#### METROPATHIC HEMORRHAGE.

Metropathic hemorrhage and hemorrhages occurring at the climacterium respond especially well to this form of treatment. Sometimes these hemorrhages occurring at about the normal menopause respond remarkably quickly. Herff<sup>15</sup> says the best results are obtained in climacteric hemorrhage. Of 49 patients of this class treated by him all but one were cured. In all of these cases the hemorrhage had resisted the previous measures used. The action is the more prompt the nearer the normal menopause.

#### WHAT MAY BE EXPECTED IF MALIGNANT DISEASE HAS DEVELOPED?

I began the treatment of uterine malignant disease on an advanced inoperable case in 1901. The patient was referred to me by Dr. Elizabeth Peck, at the Philadelphia Hospital. This was at the beginning of Roentgen treatment, at a time when no filtration was used and when we knew little about the control of the rays. I felt justified in treating her very severely, as was done. Two years later she returned to the Philadelphia Hospital because of the degeneration of the skin

over the lower abdomen, due to the effects of the rays. At this time all evidence of carcinoma of the pelvis had disappeared, according to the statement made by Dr. Peck. During the subsequent years I treated about fifteen patients, but with only a moderate improvement, and I abandoned the treatment for about eight years. During the past year I have been much encouraged by the effects of deep Roentgen therapy and have again treated a few cases of recurrent carcinoma of the pelvis. The patients have improved, but I am not yet prepared to report any specific results in this field.

Amann<sup>16</sup> states that he has applied Roentgen therapy in 52 cases of uterine cancer. In the 31 absolutely inoperable cases of cancer of the cervix, five of the patients were completely or nearly cured, 29 per cent thus being restored to health, when they had been absolutely doomed before. The improved technic accomplishes this, besides, without danger of Roentgen burns even with the far more extensive dosage, while the action on the cancer cells is more destructive. When the rays are applied both from front and back to act on an advanced cancer of the cervix, they act on the entire region, all the lymph glands and adjacent tissues feeling the effect, and thus a more thorough clearing out of the malignant disease is possible than could even be realized by operative measures. In one case he had removed a cancer of the cervix three years before and a recurring tumor a year later. Again a tumor as large as a fist developed in the pelvic connective tissue but this was treated with intensive Roentgen exposures and a complete cure followed. The sciatica-like pains and the contracture of the foot from pressure on the nerves vanished and the patient gained in weight. She was in good health for a long time, but died suddenly later without recurrence of pelvic trouble. Amann's experience has been so favorable that he thinks the improved technic for Roentgen therapy can be applied even in operable cases.

Krönig<sup>8</sup> reports sixty-four cases of carcinoma that were treated for the prevention of secondary growth after operation; of these, forty-three were treated almost exclusively with unfiltered rays, while twenty-one cases were treated partly with filtered and partly with unfiltered rays. Twenty-three of the forty-one cases undoubtedly died of carcinoma. From following the subsequent history of twenty-one cases, in which filtered rays were used, nineteen were undoubtedly free from carcinoma. Sufficient time had not elapsed to speak of them as definite cures yet the result is so unusual that he says it will have to be credited to the treatment, and that recurrences are not so frequent when filtered rays are used after operation.

Sielmann<sup>17</sup> treated sixteen cases of carcinoma, three were inoperable carcinomas of the cervix, one became free from bleeding and pain and improved in general health, and died of apoplexy

at the age of sixty-one. Two others became free from bleeding and pain with shrinking of the tumor. Six other cases of metastatic carcinoma improved—there was a decrease in bleeding and pain, and a lessening of the malignant discharge. Four cases given post-operative treatment have had no recurrence in the two years. One case of carcinoma of the urethra improved.

With such results as the above, obtained in hopeless cases of carcinoma in which the disease has spread, makes me less fearful of treating a carcinoma that can not be diagnosed, for if we can cause the disappearance of an extensive distribution of carcinomatous tissue there should be less difficulty in causing the disappearance of an early case. This must not be understood that I am recommending Roentgen treatment in operable cases, but I think that we must not become hysterical and insist upon operating upon every case in which malignant disease cannot be absolutely eliminated. Likewise in sarcoma of the uterus, we can act within reason, for it is well known that sarcoma is even more responsive to the Roentgen rays than carcinoma. Miller, writing from the Freiburg Clinic, states that from January 1, 1909, to July 28, 1912, 175 cases of myoma were treated by the rays and none have shown any signs of sarcoma. In 318 myomas operated upon five showed sarcoma. He also showed that of 180 cases of sarcoma 79 per cent failed to be permanently cured. From an analysis of the theoretical probabilities of death from operation or death after X-ray treatment he concludes that eight-tenths of one per cent will probably die after X-ray treatment, which will compare favorable with 79 per cent after operative treatment.

The cautions laid down both by gynecologists and roentgenologists that Roentgen therapy must be applied by competent operators is, of course, very important, and even more important than that care should be used in surgical operations, for all physicians receive a certain definite amount of training, both theoretical and practical, in surgery, while many who buy X-ray machines know little or nothing of the theory or the practical application of the rays in treatment or diagnosis, and a machine will no more accomplish results in this field without the addition of skill than will surgical instruments do good operations, excepting in the hands of a skilled surgeon.

#### CONCLUSIONS.

1. Roentgen therapy must be looked upon as a very efficient adjunct to the gynecologist's armamentarium, and while I believe that the rays should be applied by the roentgenologist, he should at the same time work hand in hand with the gynecologist.

2. Deep Roentgen therapy stops the hemorrhage associated with uterine fibroids. This is followed by a gradual disappearance of the tumor. This atrophic process may extend over

several years and continues long after the cessation of treatment.

3. The treatment of metropathic hemorrhage is almost uniformly successful.

4. Uterine hemorrhage occurring at the menopause, when not malignant, will usually respond very quickly. There should be an increase in weight and an improvement in the blood condition following treatment, and when this does not occur suspicion of malignancy should be aroused. (Albers-Schönberg.)

5. Some good results can be obtained in inoperable carcinoma. The deep Roentgen therapy should be especially recommended as post-operative treatment in all cases.

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#### Discussion.

DR. JAMES T. CASE, Battle Creek, Mich.: The paper by Dr. Pfahler, it seems to me, has in a classical manner stated what should be our attitude towards Roentgen therapy and gynecology. I may be allowed to emphasize some of the essentials in treatment. First, the necessity for an accurate diagnosis. Most of the failures are due to an inaccurate diagnosis. Second, the necessity for an adequate equipment and an adequate technical experience. There are very few roentgenologists, as yet, competent in this particular line of therapy.

Personally I am not in the class of those X-ray men who do not care for the co-operation of the gynecologist. Only those who insist upon the close co-operation of roentgenologists and gynecologists can possibly be considered competent to carry out this treatment.

The writer would suggest as perhaps an innovation, the necessity for a diagnosis curetage before beginning the treatment. This is suggested by the fairly large percentage of malignancies referred to in Dr. Pfahler's paper (7%). A diagnostic curetage will avoid the majority of errors in cases of malignancy.

The death rate of 0.5 given by Gauss is specifically stated by the author to be due to other than X-ray causes. There is no desire on the part of competent roentgenologists to supplant surgery where surgery is needed, but we do insist that no question of expense in time or money weighs with a single life and unless Roentgen therapy is distinctly contra-indicated (as by the various complications which have been named), the Roentgen treatment should be insisted upon and adequate time should be allowed for its effects.

We need accurate statistics as to results. Dr. Pfahler and I are both planning on a report in which we will compile such statistics.

The fear of pelvic adhesions from X-ray treatment has also been used as an argument against Roentgen therapy, for if Roentgen therapy gives rise to adhesions and for any reason surgical treatment should later be demanded, the adhesions would be a complication. A similar argument has been used against Roentgen therapy in cases of hyperthyroidism, the statement having been made on numerous occasions that the X-ray treatment is likely to result in adhesions, which would complicate an operation should one be needed subsequently.

At the operating table the writer has, on numerous occasions, had reason to doubt the truth of this statement, both after treatment of the thyroid gland and after treatment of fibroids. The following case will perhaps illustrate conclusively the fact that the fear of adhesions need not deter one from recommending X-ray treatment:

The patient, E. C., age 62, was first referred for treatment in April, 1914, by Dr. W. F. Martin. Mr. C. had an extensive carcinomatous involvement of the prostate with twenty ounces of residual urine. By reason of carcinomatous extension to the bowel, it was not deemed feasible to operate. This opinion was concurred in by Dr. E. Wylls Andrews, whom the patient later consulted, and palliative treatment was advised. Accordingly Roentgen treatments were begun very much after the plan followed in treating uterine myoma, except that the doses were made heavier, twenty-five and sometimes thirty X-units being given over the various skin areas chosen for cross-fire, the carcinomatous area being approached through twenty-six areas,

twelve anterior, twelve posterior and two perineal. Only palliative results were hoped for, but the results were awaited with great interest. The residual urine was reduced to two ounces within four weeks and the prostate was considerably diminished in size.

In February, 1915, ten months after treatment was begun, the patient meanwhile having received nine series of X-ray treatments, the constriction of the bowel by the malignant growth or its cicatrix seemed to demand colostomy. Therefore, Dr. Kellogg decided to operate, the opportunity being utilized to explore the pelvis carefully. In view of the fact that the patient had been subjected to such an extensive course of X-ray therapeutics, nearly 6,000 X-units measured under the filter having been administered during ten months, the appearance of the intestine was noted with great interest, to discover possible adhesions, the result of the Roentgenization. The small bowel was entirely free from adhesions. The iliac colon was adherent near the iliopelvic junction, but in a manner very commonly seen at operation in patients who have never taken any Roentgen treatment. Just below the pelvi-rectal junction, at the site of the malignancy, the bowel was found tightly adherent, the adhesions being confined to an area not larger than a pigeon's egg, but tightly constricting the bowel. Proctoscopic examination showed at this point an annular constriction with some ulceration of the mucosa which bled easily on being touched. A colostomy was performed in the usual manner.

The foregoing case, it seems to the writer, proves conclusively that there is no danger of adhesions following intensive Roentgen therapy directed toward the pelvis.

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## TWILIGHT SLEEP.\*

By ABRAHAM J. RONGY, M.D., F.A.C.S.,

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IT is fully ten months since "Twilight Sleep," as developed by Gauss, has been introduced in this country. During this period various obstetricians have given this method of treatment a fair trial, and have reported their work from time to time through the usual medical channels. It may here be stated that no medical subject in recent years has created such widespread discussion among the public. The press recounted miraculous reports daily of women who had gone through childbirth painlessly. Photographs appeared regularly together with exaggerated descriptions of the wonders that this

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\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

method accomplished. Women were informed that labor conducted under the new treatment would suffer no shock, their vitality would be conserved, and that they would be in such fine and fit condition that they could leave their beds the day following the birth of their babies.

The vivid descriptions of "Twilight Sleep," as an absolutely painless labor, naturally attracted the attention of a great number of expectant mothers, and obstetricians were very soon confronted with a problem which they were, as yet, unable to solve. At that time the medical profession had to form their opinions on the work done at Freiburg, and other foreign clinics, and therefore the advice given to their patients was not based upon personal experience, or observation. Very soon investigations, as to the merit of this form of treatment, were instituted in many of our obstetrical clinics, and here, I dare say, that their early reports were tinged with a certain amount of enthusiasm due primarily to the fact that the statements of the mothers influenced, to a great extent, their opinions as to the value of this method of treatment.

In our enthusiasm we overlooked the most essential fact in the entire procedure, namely, that "Twilight Sleep" and painless labor are not synonymous, and that in a large number of cases pain is but little influenced. Furthermore, the degree of pain bears no relation to amnesia. A patient may suffer a great deal of pain during the progress of her labor, and still have no recollection of it the following day. This will always form the basis for differences of opinion between the medical profession and women who have been subjected to this form of treatment.

That the testimony of these women is incompetent is obvious, and as such should be given no consideration in arriving at conclusions as to the value of this method. Scientifically, we must judge this mode of treatment from the standpoint of analgesia, and not amnesia. It is the actual diminution of pain that the medical profession should be directly concerned with, and all our efforts should be concentrated to accomplish this. It is of comparatively small importance to us, and should be to the woman, whether or not amnesia is obtained. Heretofore the report of successful cases was practically based upon the degree of amnesia obtained, making analgesia of secondary importance.

As our experience increased we, of necessity, were compelled to arrive at a different conclusion. We soon found that a large number of women suffered a great deal of pain and discomfort, and the question suggested itself to our minds whether we were not, to some extent, responsible for an inaccurate presentation of this subject to the medical profession. I believe it the duty of each and every one of us to correct this false impression, both from the medical and lay aspects, and to particularly impress the public that "Twilight Sleep" is not synonymous with

painless labor. It is incumbent upon us to point out that professional journalists and other women, no matter how honest and well meaning they may be, are absolutely ignorant of the scientific aspect of this method of treatment, and cannot possibly have, or form a proper conception of it.

We have now reached a stage in the development of this work where we are confronted with a peculiar situation, which heretofore has been entirely ignored in the various discussions upon this subject. It is now well established that if this form of treatment is properly carried on, it will produce amnesia in approximately 75 per cent of cases. Many of these patients, because of extreme intoxication of the more highly developed nerve centers, fail to retain the memory of pain, leave the hospital honestly believing that they have actually had no pain. Such women will, of necessity, tell other women that child-birth by this method is absolutely painless.

The attending physician, however, has before him an entirely different picture. He knows that these women have experienced pain, he has heard their screams, and was even accused of being cruel for refusing to administer "Twilight Sleep" to them. The opinions of the physician and patient concerning this form of treatment must always differ, and antagonism upon the scientific merit of this procedure will always exist between them. It is quite improbable that any effort to harmonize them would meet with any degree of success.

It is certainly most unfortunate that the first comprehensive description in this country of this form of treatment appeared in the lay publications, for not only did it create a strong prejudice against it within the medical profession, but it also tended to reflect upon the professional reputations of such eminent scientists as Kronig and Gauss, who, after most painstaking efforts extending over a period of eight years, have succeeded in developing an accurate and well defined technic in the administration of scopolamine-morphine in connection with labor.

Our profession has invariably proved itself equal to all occasions, and in this instance it is to be regretted that a number of our foremost obstetricians were unduly hasty in expressing their opinion of this method through rather unusual channels without thorough investigation.

We all know that a legitimate amount of conservatism is absolutely essential on the part of the medical profession, so that a proper equilibrium may be obtained, and the public be protected against the results of over-enthusiasm. Those who are familiar with the history of medicine are fully conversant with the fact that most new methods of treatment, especially those which have been radical departures from routine and accepted standards, have always brought forth sharp protestation and even condemnation on the part of those who refused to progress with the advances made in science.

In reviewing the history of scopolamine in relation to obstetrics, we find that it is passing through the same process of evolution common to all new methods of treatment. It is but natural to expect, at this day, that a great deal of opposition should arise against it. Not only is it condemned by those who think that they have had some experience, but even by those who have made no attempt to give this method a fair trial.

To produce "Twilight Sleep" clinically, the attending physician must have a concrete conception or mental picture of what he is seeking to accomplish. In Dammerschlaf the patient is able to perceive but not apperceive. The patient should always be able to answer commonplace questions, even though the responses be somewhat delayed, indicating a sluggish mental state. Between pains the patient should rest quietly or fall asleep. During a pain the patient may moan or even cry out, move about aimlessly and entirely forget its occurrence as soon as it subsides. In other words, an inco-ordinate subconscious mental state must be evenly maintained and any deviation from this will invariably lead to undesirable results.

As a general rule, it may be stated that no form of treatment will meet with the same success in the hands of all who use it, even though the technic followed be the same. What then should we expect to accomplish with a form of treatment in which the technic and dosage varied with each and every investigator?

A study of the literature reveals the fact that there are two distinct groups opposing this method of treatment. (1) Those who have tried the method occasionally, based upon no definite technic, with results correspondingly unfavorable. (2) Those who have given this method a fair trial but have not followed the technic as outlined by König and Gauss.

Before taking up the physiological action of scopolamine and morphine, it would not be amiss to touch upon the physiology of labor pains and our aim to modify or alleviate these by the use of drugs.

We must differentiate between objective pain by which we understand uterine contractions, and subjective pain, which is that sensed by the mother. Any method which has for its object the elimination of subjective pain, must, under no circumstances, interfere with objective pain.

It is a well-known fact that the pain caused by uterine contraction, does not affect all women alike. Every experienced obstetrician has occasionally seen a patient in whom labor had progressed to a stage of complete dilatation without any physical evidence of pain. We must, therefore, conclude that the degree of subjective pain depends upon the sensitiveness of a given nervous system. It is equally well known that the degree of sensitiveness can be modified by the use of many therapeutic measures.

The central nervous system is the seat for the

perception of pain. Impulses are conducted to and from it. The degree of pain depends both upon the ability of the cortex of the brain to receive and upon the nerve trunks to conduct. If, by any method, we are able to minimize either the perceptive power, or the degree of conductivity, pain may be markedly diminished, or even entirely abolished.

From the above it may be seen that the progress of labor does not depend upon subjective pain, and that this may be diminished or eliminated without interfering with the normal progress of labor. Labor essentially depends upon the degree of uterine contraction for its successful termination. The purpose and object of this method of treatment is primarily to obtain a mental state in the patient by which the receptive and perceptive powers are diminished without the complete loss of consciousness. Clinically, this is best accomplished by the judicious use of the combination of scopolamine hydrobromide and morphine.

It is not my intention to discuss the various physiological manifestations produced by these drugs upon the central nervous system, for I feel certain that their effects are too well known to all. I shall only attempt to call attention to the effect produced by these agents in their relation to obstetrics.

The action of scopolamine is chiefly upon the central nervous system. It quiets the cerebrum and diminishes the perception of pain, without apparently influencing the contractility of the uterus. Labor, therefore, may progress uninterruptedly and the patient may not only fail to recollect these pains, but may even be entirely unaware of them.

#### CLINICAL TYPES.

Clinically these cases may be divided into three distinct groups: (1) Those patients in whom we obtain both amnesia and analgesia, that is, abolition of memory and diminution of pain; (2) patients in whom we obtain analgesia without amnesia; (3) cases which entirely fail to respond to this treatment.

#### TECHNIC.

In order to obtain the best results with this method, certain cardinal requisites must be strictly observed. It is absolutely necessary that the patient be so placed that she will be free from all disturbing influences. A physician or nurse should be in constant attendance. The effect of the drug should be carefully watched so that it may be repeated at proper intervals. Light in the room should be so arranged that the patient is not disturbed by it. The fetal heart sounds should be carefully studied. The solutions used should be obtained from reliable chemists; and should be accurately standardized. It should be perfectly clear, never having any sediment or flocculence, and should preferably be put up

in ampules each containing the quantity required for a single injection.

For purposes of accurate statistics, special charts were printed, indicating the important points to be noted.

Our rule is to admit to the hospital only those patients who are in active labor. We, therefore, have no means of judging precisely when labor sets in, nor the average duration of the first stage.

Treatment is begun only when the patient shows definite signs of active labor. The patient is then put to bed in a dimly lighted room, and an initial dose of 0.00045 gm. or approximately 1/135 of a grain of scopolamine hydrobromide is injected intramuscularly. This is preceded by a hyperdermic injection of one-half grain of narco-phin. The effects are now carefully observed with special reference to pulse, respiration, pupillary reaction, fetal heart sounds and frequency and intensity of uterine contractions. A second injection of 1/400 of a grain of scopolamine is given about one hour after the first one. About one-half an hour after this injection memory tests are brought into play. The patient is shown some object, such as a doll or watch and a short while later she is asked whether she remembers having seen the particular object in question, or she may be asked whether she remembers having received a hyperdermic injection. Any test of memory will do. The repetition of injections is now primarily gauged by the degree of amnesia present, this being the guiding point throughout the treatment. The interval between injections is approximately one to one and one-half hours. The average normal case requires from five to seven injections, although at times it may be necessary to give only two or three, or as many as twelve or fourteen.

At the completion of the first stage, with the presenting part on the perineum, one c.c. of pituitrin is often given to hasten delivery. In using pituitrin in these cases, especial attention should be paid to the fetal heart sounds, for there may be danger of producing asphyxia in a child which is already oligopnolic. As soon as the child is born, the cord is quickly ligated and severed and the infant is removed to another room. The mother is made comfortable and usually falls into a deep slumber, to awake two to four hours later often in complete ignorance of the fact that she has already given birth to her child.

Our experience with this form of treatment consists of a series of 300 consecutive cases in the obstetrical services of Jewish Maternity and Lebanon Hospitals. As previously stated, these cases were subdivided into three groups with the following results: (a) 231 cases, or 77+ % in which there was complete amnesia with varying degrees of analgesia; (b) 37 cases of 12+ %, in which there was varying degrees of analgesia without amnesia; (4) 32 cases, or 11 % in which the treatment failed to produce the desired effects.

#### TOTAL AVERAGE DOSAGE.

In primiparæ scopolamine hydrobromide 1/50 of a grain. In multiparæ 1/66 of a grain.

#### NUMBER OF INJECTIONS.

Smallest number, one; largest, twenty-two.

Dose of scopolamine, smallest, 1/400 of a grain; largest, 1/5 of a grain.

We shall now attempt to emphasize those phrases associated with labor and the post-partum period which are of special interest to the obstetrician.

#### DURATION OF LABOR.

Since our patients are admitted only when in active labor we have no precise means of judging its exact duration. Labor is unquestionably prolonged, the delay occurring in the second stage. The first stage is somewhat shortened.

The average duration of labor in our series figuring from the time of admission to delivery was eight and one-half hours. The average time that the patient was under the influence of scopolamine was seven hours in primiparæ and three and one-half hours in multiparæ.

#### RESTLESSNESS.

Six cases had marked restlessness requiring restraint. A great number displayed varying degrees of restlessness not requiring restraint.

#### HEMORRHAGE.

No appreciable alteration in the amount of hemorrhage was noticed by us, and Beruti by actual weights in over 400 cases proved that bleeding was somewhat diminished.

#### PERINEAL LACERATIONS.

Second stage is somewhat delayed and stretching of the perineum is more gradual and lacerations are therefore less likely to occur. Siegel reports six first degree lacerations in seventy-eight spontaneous deliveries in primiparæ, or 7% per cent. Harrar and McPherson report thirty-seven lacerations in 100 cases treated with scopolamine as against forty-five lacerations in 100 cases not so treated. In our series there were forty-five, or 15 per cent lacerations in which suturing was required. However, the fetal heart sounds must be watched closely or the life of the child may be endangered.

#### OPERATIVE PROCEDURES.

In this series labor had to be terminated artificially in fifty-two cases, or 17+ %. In four patients the breech presented and delivery was accomplished by bringing down a foot. In forty-eight cases delivery was terminated by the use of the forceps. Of these five were median and forty-two low. Two cases were nephritic with marked oedema and it was deemed advisable to terminate labor quickly.

#### ANESTHETICS.

In the most recent report by Siegel of Freiburg in a series of over 200 cases, ethyl chloride by inhalation was administered as a routine during the

stage of expulsion. This is done in order to further obviate any recollections of pain.

It has been found that in order to carry out this form of treatment successfully, the patient must be constantly kept under the influence of the drug. Should she at any time during the course of the treatment partially regain consciousness, she will not only recollect the pain which she actually experienced, but will reconstruct the entire progress of labor. Such isolated periods of relative consciousness are termed by Gauss "isles of memory." These are more apt to occur during the stage of expulsion. In our series we do not find it necessary to resort to the use of the general anesthetic for this purpose.

Ether was the anesthetic used when artificial delivery was performed. The use of chloroform for any purpose during labor was abandoned by us about three years ago. The patients were very quickly narcotized, taking the ether very readily and consuming very small quantities of it.

#### CONTRAINDICATIONS.

With the possible exception of kidney complications and primary inertia, we find no contraindications for the use of this method. Zweifel even goes so far as to recommend it in eclampsia and reports three cases treated successfully.

Endocarditis was present in eight cases with no untoward effects as a result of this mode of treatment. On the contrary we believe that this procedure is especially efficacious in labors associated with cardiac diseases, for it tends to eliminate, not only the mental anxiety, but the actual physical strain induced by the patient's efforts to help labor along.

#### CONVALESCENCE.

It is interesting to note how little these patients are physically affected by labor. The exhaustion that usually accompanies labor in primiparæ is partly eliminated. They usually appear restful the following day, for instead of having passed the previous day in pain and wakefulness, they had gone through labor in a state of semi-consciousness without any undue physical exertion.

In this series one patient developed postpartum psychosis on the fourth day. Within the same week two more cases occurred in my obstetric service at Lebanon Hospital. Owing to my absence from the city scopolamine was not given in these two cases. I consider it most fortunate that this method was not used in two of the cases, for I feel certain that the mental state would have been attributed to the use of this drug. This naturally would tend to discredit this mode of treatment, resulting most likely in its discontinuance. That this coincidence would create a most peculiar situation was more so impressed upon me by the fact that when the attending neurologist was asked to see these patients, he immediately inquired as to whether they had had "twilight."

Another interesting illustration of this kind occurred in a child which was born oligopneic. Fail-

ing to improve, resuscitation by the catheter method (the only method used by us), was resorted to and continued for two hours, at which time the heart action ceased. It was early noticed that the cardiac impulse was on the right side. Permission for autopsy was finally obtained. The findings were very unusual. A large congenital opening was present in the left muscular portion of the diaphragm. The stomach, small intestine, greater part of the large intestine and spleen were in the thoracic cavity. Both lungs were collapsed, and the heart was situated on the right side. The liver occupied the entire abdominal cavity. Without autopsy, this death would undoubtedly have been attributed to the use of scopolamine. It has always been the fate of any new method of treatment to ascribe to it many complications that would have taken place ordinarily, and it is only through mere accident that we occasionally are able to account for them otherwise.

We have also observed that the tendency toward engorgement of the breasts is notably diminished in these cases. This is probably due to the action of scopolamine on the peripheral secretory nerves.

#### CONCLUSIONS.

1. Standard solutions are absolutely essential for the success of this treatment.
2. No routine method of treatment should be adopted. Each patient should be individualized. This method does not merely consist of repeated injections of the scopolamine at prescribed intervals, but the mental state of the patient should be made the guiding point. A subconscious state must be evenly maintained.
3. Facilities should be such that the patient is not unduly disturbed.
4. A nurse or physician must be in constant attendance.
5. This method of treatment is best carried out in hospitals, although there is no reason why it cannot be accomplished in well regulated private homes. However, if for any reason, the physician attending a patient at her home, does not see fit to institute treatment early in labor, he surely can utilize this method in the second stage, and still save the woman a great deal of unnecessary pain. That this may be accomplished was demonstrated in eight cases in whom treatment was instituted at the end of the first stage of labor. All of these cases had marked analgesia with complete amnesia.
6. It does not affect the first stage of labor, but the second stage is prolonged.
7. Pain is markedly diminished in a great per cent of cases, while amnesia is present in 75 per cent of patients, but labor is not painless as is generally supposed.
8. This treatment does not in any way interfere with any other therapeutic measure which may be deemed necessary for the termination of labor.



9. Fetal heart sounds must be carefully watched. Sudden slowing calls for immediate delivery, if possible, or treatment must be discontinued. Fifteen per cent of the babies were born oligopnolic.

10. Aepsis and antiseptics cannot be rigidly enforced.

11. No change in the course of the puerperium was observed, and convalescence progressed very smoothly in our entire series.

12. Women of a higher grade of intelligence are best suited to this form of treatment.

13. This treatment is best carried out in primiparæ or in multiparæ with tedious labors. It has no place in short labors.

14. This is an ideal form of treatment in patients suffering from cardiac disease.

Finally, every experienced obstetrician is fully aware of the fact that the number of births showing anomalies, such as premature rupture of the membranes, incomplete dilatation of the cervix, abnormal presentations and primary inertia are on the increase. It is equally well known that women following a profession requiring a superior mental development, have more difficult deliveries. The demands made by hard work, or by social obligations upon the modern woman in our large cities, are so great that their nervous systems are constantly overworked. What we consider a normal nervous system now rarely exists, and therefore pain is not well borne.

In our opinion, subjective pain incident to childbirth, serves no purpose in nature, but is rather an unnecessary result of an unchangeable natural law that all severe muscular effort is accompanied by pain. The metabolic end products of muscular activity are irritating to nerve ends causing pain. Thus, we see severe pain accompanying the hurried muscular peristalsis of the bowel in ridding the system of injurious material, the excruciating colicky pain caused by the propulsion of a biliary or renal calculus, and finally, the agonizing pain incident to expulsion of the fetus from the uterus. In trying to relieve these pains, we are not in conflict with a natural purpose. If pain can be relieved, it is the duty of every physician to do so, and no effort should be spared to accomplish it.

For our part we are fully convinced that this method of treatment instills within the woman a feeling of confidence which naturally aids her in passing through this trying ordeal, and although the greatest number do suffer varying degrees of pain, still there is no mental recollection of it in 75 per cent of cases, and if the physician, as well as the patient, contents himself with amnesia as the object to be accomplished then only will its proper place in obstetrics be established.

#### *Discussion.*

DR. W. T. GETMAN, Buffalo: I think the distrust of "Twilight Sleep" among the medical profession comes from two factors: Lack of personal experience with the treatment,

or of non-adherence to the technic worked out so carefully by Gauss.

From all that I can learn of the bad results reported by various hospitals and men it has been from using their own technic rather than the one that has proved safe in a number of thousands of cases. These bad results come from repeating the dose of morphine, over dosage of scopolamine, and using some other index than that of the memory test for repeating the scopolamine.

We have used the treatment at the General Hospital in forty-seven cases, and I have used it in twenty-five private cases outside, without any foetal or maternal mortality due to the drug, and with better results as our experience increases.

We are, however, using it only in selected cases—primiparæ and in multiparæ where we expect a longer labor than normal, as I find that if started too late in labor in a primiparæ or in the ordinary multiparæ with a short labor, that there is a higher percentage of cyanosis.

The ordinary baby does not need any more attention than where no drug is given, as practically all of them breathe spontaneously.

There is a certain amount of idiosyncrasy in the patient's reaction to scopolamine as shown by one patient that received seventeen doses (the highest in our series) with absolutely no amnesia, but who twice called for a drink of water as the head was passing through the vulva, and seemed more interested in the fact that her throat was dry than in the birth of the head.

I have used it in three cases of preclampsic toxemia during induction of premature labor, and I think it was of material aid by lessening the wear and tear of the process.

Personally, I think very highly of "Twilight Sleep," and consider it perfectly safe if used properly.

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### EXPERIENCES WITH MALT SOUP FOR INSTITUTION MARASMUS.\*

By THOMAS S. SOUTHWORTH, M.D.,

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NOT many months ago, in assuming control of many wards containing a considerable number of bottle-fed institution infants, I was confronted with the problem of improving their nutrition. An epidemic of respiratory trouble in the form of an infectious cold had recently invaded the wards. Many of the infants were still coughing. The stools of the majority were of the white and green color, known probably to all institution workers, which is so disheartening as an index of the patient's digestive and absorptive status. Many of the infants were losing weight.

Upon neither the stools nor the weight did careful readjustment of the usual formulas,

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made of milk or top milks with lime water or barley water and the various sugars, have any appreciable influence. As many of the losses in weight continued in spite of these changes, it promptly became evident that it would be impossible to await, as is frequently possible in private practice, the further results of such adjustments of the ordinary types of feeding mixtures. Some plan had to be adopted which would cut short the losses in weight, otherwise a number of deaths might be expected among those infants who had nearly reached the viable limit of inanition.

Malt soup was selected, from previous experience, as the preparation which offered the greater promise of producing the desired results. The trial was observed with great interest by both the interne and nursing staffs, as this form of feeding had not been previously employed in these wards. No attempt was made to follow any stock directions, such as appear with certain brands of the malt-soup extract, long experience having taught that the milk content of malt-soup mixtures should, as elsewhere, be adapted to the individual requirements of the infants, and that infants should not be called upon to adapt themselves to one or two preconceived formulas.

On the contrary, the purpose was to substitute for the milk sugar and possibly barley water of the infants' formula, carbohydrates in the form of the more absorbable dextrine and maltose contained in the malt-soup extract, together with the usual accompaniment of boiled wheat starch for its recognized protective action.

Our procedure, therefore, was to select from day to day those cases whose condition was most critical, and to employ for each infant, in making up its daily supply of food, the number of ounces of milk, or top milk, which it would properly receive in an ordinary suitable formula. To this, and the requisite amount of water, was added the malt-soup extract and wheat flour, usually in the proportion of one level tablespoonful of each for approximately each ten ounces of the total food. The mixture was brought slowly to a boil to gelatinize the starch, and was then strained, cooled, and bottled.

Used in this way, a malt-soup mixture is not a stereotyped and inflexible infant food, but only another helpful method of modifying milk for the infant's needs. In private practice, it is often well to cook the malt-soup mixture for thirty minutes, but this is somewhat too cumbersome for routine institution work, owing to the multiplicity of different mixtures.

As a life saver, or at least prolonger of life, the malt-soup mixtures proved successful in nearly every instance where they were given. The prophecy made at the start that flocculent white and green stools would become smooth and brownish within twenty-four to forty-eight hours, was, as a rule, justified. Infants who seemed doomed, ceased to lose weight, and in

many instances promptly showed moderate gains. It is this complete change in the character of the stools which is the most encouraging feature of malt-soup feeding.

The digestive disturbances in institutional infants appear to stand in a class by themselves. Very possibly they are often due to some undetected "ward factor," which affects at the same time a considerable number of babies housed in the same ward. These disturbances are certainly more resistant, possibly because they are more profound, than similar disturbances in private and out-patient practice, and also than those of infants newly arrived in well ordered hospital wards.

I think it will be conceded by those having experience in institution wards, even granting the tendency of all dextrine and maltose additions to produce characteristically brownish stools, that something more than mere change in color of the stools has taken place in the chemistry of intestinal digestion when in twenty-four to forty-eight hours white and green stools become a smooth brown or brownish-yellow. No such prompt change has occurred in my experience from the mere substitution in these particular cases of a dry maltose and dextrine for milk sugar, nor is the effect upon weight the same.

Undoubtedly if time allowed, excellent results could be obtained by manipulation of the percentages in the usual feeding formulas of apparently similar infants in outside practice; but in the type and condition of infant of which I speak, experience teaches that there is no time for the gradual production of such results. These infants must be furnished, with the least possible delay, something which can and will stimulate absorption and be absorbed, else they pass into a condition from which nothing, save possibly breast milk, can recall them.

To accomplish this, something more is required than manipulations of the same ingredients of the food which the infants have already been receiving, and upon which the processes of digestion and absorption have broken down. It is necessary to introduce something which in part, at least, is different; something which makes less demands upon those functions of digestion which have been exhausted; that makes its own demand upon unexhausted cells and ferments.

If the history of the feeding, or of the stools, indicates that a fat injury has played a part in the debacle, plain milk should be substituted for top-milks or cream and milk mixtures. Experiences with albumin milk have pretty well demonstrated that the casein of cows' milk is but rarely a disturbing factor, and that it will be tolerated in reasonable amounts. Milk sugar and cane sugar, both of which are disaccharides, at times overtax the upper part of the small intestine, with consequent disorganization of the functions of this important part of the digestive

tract. The substitution of cane sugar for milk sugar, or vice versa, is of little assistance, as approximately the same conditions continue to prevail.

The substitution, however, for either of these single disaccharides of mixed carbohydrates, maltose, dextrine and starch—introduces new elements and new conditions. Dextrine and starch are polysaccharides, and are more slowly broken up. Both the chemical processes and the absorption are spread over a greater length of intestinal surface, bringing into play new ferments and fresh absorptive areas. This simple and rational explanation appears to cover satisfactorily the *modus operandi* of malt-soup formulas in this class of cases, as, indeed, in that of others whose digestive processes have been profoundly disturbed.

Vomiting, which in some of the literature concerning malt-soup, seems to be feared by some writers because of the supposed high sugar content, was not a factor in these cases save in the terminal stages of one or two who later died. On the contrary, it may be recorded here, that it has not been my experience that malt-soup either caused or aggravated vomiting, but rather that in numerous instances vomiting has ceased under its administration, where it had existed before.

Free and even loose stools of lighter color, at times persisted co-incident with improvement in weight, although the classical and desirable stool of malt-soup feeding is darker brown and more or less formed. A certain amount of gas formation, evidenced by expulsion per rectum or by vacuoles in the semi-solid stools, is not incompatible with absorption and gain in weight. It may be added that for older children suffering from subacute or acute colitis, no food equals malt-soup in its ability to nourish and prevent the excessive loss of weight, and consequent emaciation of these patients.

One word concerning the cost of malt-soup feeding, which by many is considered prohibitive for institution use. Malt-soup extract is no longer an exclusive product. It is manufactured now by so many firms in this country that one may speak freely of it as one of the established additions to our resources. It may often be purchased in bulk for institution use at prices which make it generally available. In short, it was found from more than one source, that for use among institution infants, the daily cost per infant did not exceed by more than one and a half cents, the cost of milk sugar for the same feeding mixtures.

As it always seems necessary, in connection with every disquisition concerning any particular procedure in the feeding of infants, to make it clear that one is not endorsing a single method to the exclusion of all others, he it said that this short paper discusses the somewhat extended use of but one of several recognized methods of feeding young infants who do not

thrive upon the usual type of formulas. Breast milk wholly or in part, stands pre-eminent under such circumstances, and should always be given first place when possible. Other methods of artificial feeding than that employed in this series have also produced favorable results in expert hands, and were, indeed, in use in our wards at the same time. My purpose has been to relate favorable experiences in the use of malt soup in certain instances where breast-milk was not available, and to call further attention to its utility at critical junctures, together with certain comments upon the apparent reasons for its efficacy.

No claim is made that the use of malt-soup in such emergencies solves the whole vexed problem of mortality among institutional infants. Too many factors beside that of food—some of which have been referred to above as “ward factors,” enter into the causation of such mortality, and to these, after a period of improvement, some of the infants succumbed.

It would be idle to assume that any single method of feeding, or any group of methods, will alone rectify matters. The use of malt-soup in our cases was confined to certain desperate cases for whom the use of other formulas had not availed, with the result that death was averted, and at least temporary improvement was secured.

More extensive and fundamental changes must be made in the methods of caring for such infants before the mortality of those infants who remain in the institution for indefinite periods can be reduced to a reasonable minimum. But the fact remains that a certain fraction of the mortality can be reduced through the introduction of more diversified feeding methods, and that an emergency measure of great value is to be found in the rational use of malt-soup mixtures.

Furthermore, a considerable number of infants are placed temporarily in institutions, with the expectation that they will be returned to their homes, or to the care of friends. With these, the problem often confronts the physician, not only of keeping them alive until this change of environment takes place, but to send them out with such maintenance or restoration of their digestive and absorptive functions that the foundation will have been laid for continued progress. This desirable end was accomplished in a number of the group under consideration who would otherwise unquestionably have died without the prompt restorative stimulus of malt-soup feeding.

As a further justification for bringing before you personal conclusions derived from the management of this type of ward cases, may I say that while it may be conceded that the ability to secure satisfactory results in infant feeding in private practice does not necessarily insure success in feeding institution infants—on account of the numerous factors involved—the converse, fortunately, is true, that measures which are

successful in the wards may be expected to attain a still higher degree of success in outside practice.

#### Discussion.

DR. NORRIS G. ORCHARD, Rochester: In all probability no one question on the subject of feeding of infants will elicit more variant replies and opinions than that of "What is to be done for the bottle-fed institutional infant who persistently refuses to gain or who is losing weight?" Of all the problems to vex the soul of the pediatricist there is none comparable with it, and the reader is to be congratulated in that he has successfully answered the question by employing in some cases malt-soup extract. With some of us it has been a question: "Will anything other than breast milk help?" Even that, in some instances, failing to check the steady wasting.

As the reader has pointed out, the change from a vari-colored, more or less foul stool to one which more than anything else resembles pulled molasses taffy is most gratifying, especially when there is coincident with this a gain in weight. Whether or not malt-soup stands alone in effecting this change in stools, is questionable. Doubtless many of us have seen remarkable changes in the stools of those acutely ill, when eiweismilch, protein milk or buttermilk has been used. It is rare, however, to observe such sudden changes in the stools of infants so perilously near the stage of inanition as described by the reader.

It is perhaps difficult to picture in such infants any part of the intestinal tract not more or less profoundly diseased, or at least markedly lessened in tone, so that discussion as to their permeability by certain sugars or their absorption is based on rather uncertain premises. May it not well be that the value of the malt-soup preparations lies in the combination of maltose, salts, nitrogen containing compounds and the variety of dextrans and substance closely allied to them as suggested by Howland?

As regards the cessation of vomiting and non-production of vomiting—in our hands a doleful contrary has been the rule, so much so that vomiting has been considered a well-defined contraindication. Not only has this been the case in the use of malt soups, but even with the plain dextro-maltose. Possibly this has been due to faulty preparation or administration.

Statistical data (usually annoying and tiresome, to be sure) in this series of cases would have been helpful. To know how long these babies have been ill—standing still or losing weight: their various weights, number of stools, etc., before and after the institution of malt-soup feeding, might have given us a clearer conception of their progress. How long they were kept on malt soup and whether or not the original amount was increased would have established somewhat more definitely its value. However,

Dr. Southworth is to be congratulated warmly that in this very difficult branch of work he has been able to achieve such satisfactory results.

## BLOOD COAGULATION IN INFANCY.\*

By HENRY L. K. SHAW, M.D.,

and

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THE clinical significance of the blood coagulation time in young children has not received from the pediatrician the attention it deserves. One reason for its neglect lies in the difficulties of technique and the wide divergence of results by different methods and observers. More reliance would be placed on the coagulation time, and its determination would become more a matter of routine examination, if a simple and reliable method were available. A number of methods have been employed by different observers depending on various principles and instruments. Addis, Dale and Laidlaw, McGowan, Rudolf, Sabraze and Schultz, Vierordt and Wright, utilize the capillary tube. Brodie, Boggs, Pratt and Russell employ apparatus in which the corpuscles are set in motion by a current of air or oil directed against the drop of blood. Biffi, Brooks, Buckmaster and Goldhorn collect the blood on one or more wire loops. Burkner, Riebe, Schwab, Slide and Straw determine the clotting time by the formation of fibrin. Bezancon, Duke, Hayam, Hinman, Giroman, Tabbe, Milian, Sladen and Solis-Sohen calculate the coagulation time by observing changes in the contour of the drop.

Carpenter and Gittings made a most exhaustive study of the coagulation phenomena as evidenced in children. They called attention to the many factors and sources of error which brought about a wide variance of results. Atmospheric conditions and viscosity of the blood are factors which cannot be controlled, but there are sources of error in technique which may be eliminated by practice and skill. These are, presence of dirt on the site of puncture or on the instrument, pressure on the tissues surrounding the puncture, size of puncture influencing rapidity and volume of flow, amount of blood withdrawn, length of time the blood remains in contact with the tissues, temperature at which the blood is allowed to coagulate, shape, diameter and depth of the drop under observation, and the end point adopted.

The wide variation in results is explained not alone by the different methods and principles but also by the personal equation which is a very large factor in a blood coagulation test. Thus, by one method, normal healthy blood will

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clot in  $2\frac{1}{2}$  minutes, while by another method the blood from the same person takes 34 minutes, yet by each method the coagulation time is normal. The same tests, taken by different observers, will vary in their results by several minutes. A discussion of all the theories that have been advanced to explain the phenomena of blood coagulation, is not within the limits of this paper. A short description of the work of three of the more recent investigators will give some idea of this important and complex problem.

Morawitz claims a substance, which he terms thrombokinase, is present in all the body tissues and more particularly in the blood platelets. It is not found free in the circulating blood. Fibrinogen, prothrombin, antithrombin and calcium salts are present at all times in the normal blood stream. When there is an injury to the body tissues or to the formed elements of the blood, the thrombokinase will combine with the calcium salts and prothrombin and a new substance, called thrombin, is produced which unites instantly with fibrinogen to form fibrin or clot. Antithrombin receives its name from the power to prevent the formation of thrombin.

Howell differs from the conclusions of Morawitz by attaching more importance to the amount and activity of antithrombin. He believes that the sole function of the thrombokinase lies in its power to neutralize the antithrombin, and thus permit the calcium salts and prothrombin to form thrombin. He agrees in the theory of the action of thrombin on the fibrinogen to form fibrin, and also on the source of thrombokinase in the tissues and blood platelets.

The latest theory is one advanced by Bordet and Delange which may be stated, briefly, as follows: The coagulation of normal blood consists essentially of three steps:

1. Blood, on being shed, immediately undergoes some change which makes it different from the circulating blood and enables coagulation to ensue. Very little is known concerning this important initial step and its duration is unknown although it is probably very short.

2. The second step is the formation of thrombin. The duration of this stage can be measured and is probably the varying factor in the length of time required for coagulation. According to Bordet and Delange, thrombin is formed by the reaction between cytozyme and serozyme in the presence of a soluble calcium salt. The cytozyme is derived chiefly from the platelets and to less extent from the leucocytes. It is also found in the tissue juices. This cytozyme is comparable to the thrombokinase of Morawitz and Howell. Serozyme is a substance contained in the blood serum which unites with the cytozyme to form thrombin. Serozyme is comparable to the prothrombin of Morawitz and of Howell.

3. The third step is the action of the thrombin on the fibrinogen changing it into fibrin which is the clot. The calcium salts are not required

for this stage. The duration of this stage is probably within two minutes.

Clinical methods to be practiced should have simple and inexpensive apparatus, easy and rapid technic and show constant and accurate results. The writers employed two methods, depending on different principles, which seemed to meet these requirements. The apparatus designed by Boggs, a modification of the Brodie-Russell method, is recommended for hospital and office practice where a microscope is available. The method of Dale and Laidlaw requires neither expensive apparatus nor a microscope and can be applied at the patient's bedside in the home. The essential part of the apparatus is a small capillary glass tube containing a small lead shot. The size of the tubing, as suggested by Dale and Laidlaw, is 2 cm. in length and from 1.3 to 1.4 mm. in diameter. In our investigations in infants we used capillary tubes of a much smaller diameter but of the same length, thereby diminishing the amount of blood necessary for each test. The smallest size of shot obtainable, called dust shot, was found to be of suitable size for the very small diameter of tubing used. The tubes are very easily prepared. They are first cut the desired length and one end is narrowed in a gas flame just enough to prevent the shot from passing through. After the shot has been introduced the other end is similarly narrowed so that the shot can roll the whole length of the tube but cannot fall out at either end. A new capillary tube with its contained shot is taken for each determination. The test is made as follows:

A finger or toe is carefully cleaned and pricked. The first drop of blood is wiped away but as soon as the second drop appears a stop watch is started. A capillary tube, inclined upward, is brought into contact with the drop of blood and as soon as it is filled it is placed in a spring clip, the jaws of which are coated with clean plasticine or vaseline. The clip with the tube is then immersed in a water bath which is kept at a temperature of from 35 degrees to 40 degrees C. The clip is turned gently so that the shot runs slowly up and down the tube. The shot is clearly visible in a good light. The shot will travel through the fluid as the tube is tilted until the increase in viscosity causes its speed to diminish and it will come to an abrupt stop when the tube is held in a vertical position. This is the point of coagulation and the watch is stopped and the reading taken. Dale and Laidlaw and others have found the coagulation time in healthy adults by this method varies between 1 minute 39 seconds and 1 minute 51 seconds.

We made examinations in 108 healthy infants under two years of age by this method, and found the determinations were between 1 minute 15 seconds and 1 minute 48 seconds, and the average coagulation time was 1 minute 30 seconds, which is a slightly shorter time than in adults.

The coagulometer of Russell and Brodie, as modified by Boggs and described by Emerson, consists of a moist chamber with a glass bottom which can be placed upon the stage of the microscope. The upper surface is a truncated cone of glass projecting downward into the moist chamber. The lower surface is 4 mm. in diameter and on it is placed the drop of blood which should just cover the surface. This is then fitted into the moist chamber. A small tube projects through the side of the chamber and by means of a rubber bulb a gentle stream of air can be directed against the blood. Under low power the blood cells can be observed during the agitation. The corpuscles will move freely and independently of one another at first and a little later will begin to clump at the periphery. As the process of coagulation continues, the masses of corpuscles will no longer move in the drop but the drop changes its shape, the corpuscles showing first an elastic concentric motion and finally an elastic radial motion moving toward the center and then springing quickly back to their original position when the current of air ceases. This is taken as the end point. Sladen and Emerson found the average coagulation time in healthy adults to be 5 minutes 6 seconds. Our results with this instrument gave a much lower average in infants, as follows:

|   | Range         | Average |
|---|---------------|---------|
| 95 exam. in infants under 1 year of age .....         | 3' 20"—4' 42" | 3' 47"  |
| 35 exam. in infants between 1 and 2 years of age..... | 3' 20"—4' 45" | 3' 54"  |
| 20 exam. in infants between 2 and 3 years of age..... | 3' 24"—4' 45" | 3' 58"  |

In our tests we observed no difference in the clotting time before and after eating, nor at different periods of the day. There was no difference in blood taken from various parts of the body—ears, fingers or toes. We found that the first drop clotted somewhat more quickly than succeeding ones and a slight hastening of the coagulation time was noted when the tissues surrounding the needle prick were squeezed and manipulated to force out the blood.

With the Boggs instrument we could find no appreciable difference in the clotting time whether the glass surface was warmed or cooled before applying the blood. The most important factor is the volume of the blood. A deep, full drop requires several minutes longer to reach the end point than when a shallow drop is employed. Care must be taken to use the same size drop in order to obtain trustworthy comparable results.

Pediatric literature and text-books make little or no reference to the coagulation time in childhood as compared with adult life, and the authors who happen to refer to this point state that there is practically no difference. The only article on this subject is the one by Carpenter and Gittings, which we have already made reference to and quotations from. These authors made only

thirty-nine examinations in healthy children from birth to fifteen years, and found by the method they employed (Biffi-Brooks coagulometer) a range from 5 to 14 minutes. Where such a wide range exists in health very little significance can be attached to variations occurring in individual conditions and diseases.

Our results by both the Dale-Laidlaw and Russell-Brodie methods were remarkably constant and we believe we have established a normal coagulation time for infants and hope in a later communication to compare these results with those obtained in various disease conditions.

### THE TREATMENT OF RIGID ROTARY LATERAL CURVATURE OF THE SPINE BY A NEW BRACE.\*

By SAMUEL KLEINBERG, M.D.,†  
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**T**HOUGH for many years men<sup>1</sup> have occasionally suggested that the horizontal position could be utilized in the treatment of scoliosis, its importance was not established until Dr. Abbott<sup>2</sup> of Portland published in 1912 the results and details of his method, which was entirely in flexion. Since this report a large number of scoliotic patients have been treated in this manner and it is now conceded by most orthopedic surgeons that flexion is essential in the correction of a rigid spinal curvature. Convinced, by my own experience, of the value of the Abbott method I sought a means whereby some of the disadvantages of the plaster jacket might possibly be avoided or at least minimized, and devised a brace, in which the principles of the Abbott method and its details can be executed with equal accuracy and effect, and with less discomfort to the patient and less exertion to the surgeon.

The details of construction of this brace were published in the April 25, 1914, issue of the *Journal of the A. M. A.* and therefore will only briefly be reviewed here. The patient is placed in an Abbott jacket obtaining as much correction as possible, the jacket is promptly removed, filled with plaster for a torso, and over this the pattern is outlined for the bracer maker as is shown in the accompanying photograph (marked Fig. I a and b). The apparatus consists of pelvic and thoracic steel bands connected by several upright bars to which are attached the canvas bands used for pressure. When applied to the patient (see Fig. I c, d. and e) the brace effectively maintains the flexed position. It is very essential in preparing the torso to provide sufficient room for complete correction, thus enabling the surgeon to carry out all of the active corrective treatment in the one instrument. One of the objections to the Abbott jacket

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FIG. 1a.—Front view of plaster torso with outline of brace.



FIG. 1c.—Case No. 1.—Lateral view of brace. Note flexion of body.



FIG. 1b.—Back view of plaster torso with outline of brace.



FIG. 1d.—Case No. 3.—Front view of brace.



FIG. 1e.—Case No. 3.—Back view of brace.

(a) Lateral posterior bar placed far enough out to allow complete correction.

has been that it caused compression of the chest on the side of the deformity. To obviate this there was inserted in the earlier braces an additional steel upright to guide the canvas bands, thus removing lateral pressure. This, however, was soon discarded as it invariably interfered with correction of the deviation deformity. With this single exception the brace is made as originally described.

As particular care is taken to carry out every detail of treatment exactly as advised by Dr. Abbott, it may be permissible to review some of the evident advantages of the brace over the plaster jacket. The most important difference it appears to me is that, considering the treatment as a whole, *the patients are more comfortable or rather less uncomfortable in the brace. They can walk with less exertion*, several of the brace-cases travelling comparatively long distances (5 to 8 miles) to and from the hospital. Some, as noted in the accompanying chart, even attend school, and practically all eat, sleep, look and feel well. *It takes decidedly less time for the patient to get used to the apparatus*, there being rarely more than a few days' inconvenience. Pain in the chest and arms, insomnia and dyspnoea are all occasionally present but to such slight degree as to be almost negligible and never appear as they do in the plaster jacket as prominent symptoms to be expected with the treatment. General

discomfort is frequently seen, but in none of the brace cases was there noticed the marked indisposition and profound prostration observed in several of the patients in Abbott jackets. These differences are, I believe, due to the fact that the brace is very much lighter than the jacket; the corrective pressure is applied more gradually, the bands are kept smooth and hence the pressure is evenly distributed. Most of the chest is readily exposed and accessible to alcohol rubs, etc., and thus one can add to the comfort and tolerance of the subject. One who has had experience with the plaster jacket knows how much the patients dread an additional felt pad because that definitely, even though temporarily, increases the discomfort. With the brace, however, the correction can, and at all times should be conducted so slowly that the subject is hardly aware of any increase pressure, and in fact in several patients there was attained a considerable alteration in the appearance of the chest without the induction of any uncomfortable feeling. There is another decided advantage in the opportunity to at all times inspect every part of the chest, observe the changes in the different elements of the deformity, and thus be enabled as the treatment progresses to estimate with some degree of accuracy the location and amount of pressure to be applied. From the economic standpoint, also, the brace appears desirable, for as previously indicated, the one apparatus usually suffices for the entire treatment.

Complications, such as indisposition, pain in the chest, dyspnoea and general discomfort, appear now and again and usually in a very moderate degree. Numbness and tingling are also seen especially on the side where the shoulder is held high. In one case (No. 9) there resulted a marked weakness or paresis of the shoulder muscles so that the patient could not raise her arm. Pressure sores, seen frequently in the Abbott jackets, constituted the most serious difficulty encountered. They were present in eight out of thirty patients included in this report, and while they were never as large or as deep as those met with in jacket cases, they always impeded the progress of the treatment. The common site, in fact almost the only one, is under the arm that is held high. Their presence is due directly to the pressure of the steel band, but as in every instance, particular care is taken to pad the brace especially well at the usual site for a sore, its causation must depend to a large extent upon individual predisposition. In one instance (Case No. 21) the sore appeared almost promptly upon application of the brace, and although every measure that I could think of or that Dr. Whitman and Dr. Cilley suggested for its healing, was faithfully carried out, it steadily increased in extent. After three months the brace was removed and the sore rapidly healed. Recently the brace was reapplied, and thus far the sore has not opened up again.

The question has often been raised as to which



are and which are not favorable cases for treatment, and a review of about 100 patients under observation during the past three years, leads me to conclude firstly, that the limitations are the same for both the Abbott jacket and the writer's brace, and secondly that practically no improvement is obtained in the following types of scoliosis:

- 1° Curvatures with sharp angulation of the ribs, sometimes called "razor-backs."
- 2° High dorsal curves.
- 3° Cases with marked distortion in the lumbar region.
- 4° Severe S shaped curves with the dorsal deformity equal in extent and degree to the lumbar.
- 5° Mild deformities with congenital malformations.

The first group includes the very worst type of scoliosis; I have never seen any of these influenced in the slightest manner. In the second group the dorsal curve is accompanied by advanced compensatory curves in the cervical and dorso-lumbar regions in the opposite direction, as is seen in scoliosis following infantile paralysis. These have resisted every effort at correction. In the third group the cases offer very little hope of improvement because there is no effective means at hand for the correction of the lumbar curve. In one such case (No. 20) the brace was modified to allow pressure over the lumbar spine, but as recorded in the chart there was no improvement. The main reason for this was perhaps that there was too much associated pressure on the abdomen, and the discomfort compelled me to discontinue the treatment. Among the patients of the fourth type great difficulty and little success has been experienced. As mentioned in my other articles on this subject, it is easy in this form of scoliosis to produce an apparent reduction of the dorsal deformity, but this is accomplished only at the expense of exaggerating the lumbar prominence, and is not a permanent change. In the last group the mildness of the deformity, the uncertainty of the result of treatment and the long time through which a patient must be observed form a triad that speaks against radical treatment. In the cases tried the results were very discouraging.

In the same study the following types of deformity were found favorable for treatment:

- 1° Single curves to the right or left of mild or moderate degree.
- 2° Cases with long dorsal and short compensatory lumbar curves.
- 3° Mild S shaped curves.
- 4° Cases with moderate deformity in the lower half of the dorsal region, and very little compensatory deformity above or below this (as cases No. 6 and 9).

In a deformity such as scoliosis which may become dreadfully marked and the spine very immobile, one is inclined to feel that the earlier the patient comes to us (that is the younger the

subject) the better the prospect for improvement. This, however, is only partially true, as I have frequently been surprised to observe boys and girls of fifteen and seventeen years of age (as Case No. 17) with rigid curves improve remarkably, and just as often have been disappointed in seeing children of nine and ten years of age (Case No. 19) with mild deformities, apparently favorable cases, treated continually for a year or even more, show not the slightest improvement. The lack of success in the latter instance may, at least in part, be attributed to the extreme mobility of the lumbar and cervical portions of the spine, which allows the corrective pressure to shift "the spine as a whole" instead of influencing the dorsal or essential section of the deformity. It is evident therefore, that the results of treatment depend not upon the age of the patient, but upon the nature of the deformity, and in the prognosis of a given case one must take into consideration the following factors:

1. Length of time the deformity has been in existence.
2. Location of the deformity.
3. Degree of severity of the deformity.
4. Type of deformity; single, double or triple curve.
5. Congenital malformations.

This report is based upon an experience with thirty cases of rigid scoliosis treated with the writer's brace during the past eighteen months according to the principles expounded by Dr. Abbott. Of these nine were boys and twenty-one girls. Two patients were under ten years of age, twenty were between ten and fifteen years of age and eight were over fifteen years of age. Particular attention is directed to this last group of eight cases, five of which showed considerable improvement; one was very neurotic and extremely intolerant; and the other two were, one "razor-back" and the other a high dorsal following acute poliomyelitis, and neither in the light of present experience fit for this method of treatment. This group demonstrates that age is not a barrier to improvement provided the type of deformity is favorable for correction.

In judging the results of treatment, the writer took into consideration (1) the external appearance of the chest and back, that is the clinical change and (2) the *radiographic finding in the brace*. As there was no instance of complete correction, it seemed unnecessary to radiograph any of these patients outside of the brace, for it is well known that a deformity not entirely overcome tends to relapse promptly when removed from its retaining agent, be that a brace or plaster bandage. The report here rendered must necessarily be incomplete in that no patient has been under treatment long enough to allow the expression of a final opinion. Reviewing the series, it is found that in eight cases there was mild and in eleven cases marked improvement; in some of the latter there was almost

complete correction. Six patients gave up the treatment and in five, three of which were "razor-backs," there was no change. Nineteen of the thirty cases therefore were definitely made better.

Conclusions: From the foregoing facts the writer wishes to emphasize that

(1) The treatment of rigid scoliosis is a prolonged one.

(2) Improvement can be obtained in the mild and moderately severe types.

(3) The brace accomplishes this result as well and as rapidly as the plaster jacket, and with far greater comfort to the patient and less exertion to the surgeon.

The writer desires to take this opportunity of acknowledging his appreciation of the unusual privileges afforded him at the Hospital for Ruptured and Crippled in making the above study. He wishes also to thank Dr. Byron C. Darling, radiographer of the hospital, for his patient cooperation in taking the many X-rays. To Dr. Royal Whitman the writer is deeply indebted for his constant interest, kind supervision and generous advice.

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M. R.—Case No. 1.—Aet. 15 years. Before treatment.  
Severe right dorso-lumbar curve.



M. R.—Case No. 1.—Before treatment.



M. R.—Case No. 1.—May 20, 1913.  
Severe right dorso-lumbar curve.



M. R.—Case No. 1.—November 18, 1913.  
X-ray in author's brace. Note straightening of spine.



M. R.—Case No. 1.—February 15, 1915.  
Note disappearance of rotation deformity.



M. R.—Case No. 1.—November 5, 1914.  
Spine practically straight.



M. R.—Case No. 1.—February 15, 1915.  
Taken 18 months after treatment was begun. Wore  
author's brace.

TABLE SHOWING RESULTS OBTAINED IN TREATMENT OF RIGID SCOLIOSIS WITH A NEW BRACE (KLEINBERG).

| Case No. | Name  | Age | Sex | Degree of Deformity | Distribution of Deformity                | Duration of Treatment | Complications  | Clinical Appearance     | X-Ray Finding                  | Reason for Discontinuing Treatment   | Remarks  |
|----------|-------|-----|-----|---------------------|--|-----------------------|--|-------------------------|--------------------------------|--|--|
| 1.       | M. R. | 15  | F.  | Severe              | Right dorso-lumbar curve                 | 18 mos.               | Indisposition and insomnia present only first few days. Compression of right side of chest.                  | Very marked improvement | Very marked improvement        | Almost complete correction. For three months has worn straight plaster of Paris corset and has retained correction.  | Dr. Gilley's patient. Spine practically in median line. General condition good throughout entire treatment.  |
| 2.       | W. C. | 15  | M.  | Severe              | Right dorsal and left lumbar             | 15 mos.               | Slight temporary numbness in left arm. Compression of right side of chest.                                   | Improvement             | Improvement                    | Has been very comfortable; eats and sleeps well; walks distances. Considering the degree of deformity which was marked the improvement is very considerable. | Travelled long distances to hospital with comfort. Wearing straight plaster of Paris corset for one month. Attended school during most of time she wore brace.   |
| 3.       | F. S. | 15  | F.  | Very severe         | Right dorsal and left lumbar             | 17 mos.               | Compression of upper part of chest.  | Marked improvement      | Apparently complete correction | General condition good; sleeps and eats well. Travels long distance to hospital.   |  |
| 4.       | Y. R. | 14  | F.  | Moderate            | Right dorsal and left lumbar             | 14 mos.               | Slight pain in chest, numbness in left arm. Slight compression of right side of chest.                       | Marked improvement      | Marked improvement             | Mild improvement   | Patient has grown rapidly while under treatment. Looks and feels well; no dyspnea or insomnia; improvement from external appearance of back is more advanced than the apparent change in the spine itself. |
| 5.       | M. T. | 13  | F.  | Moderate            | Right dorsal and left lumbar             | 1 mo.                 | Weakness; appetite poor; marked pallor.  | Marked improvement      | Almost complete correction     | No gain in last six months and patient was becoming weaker   | At cessation of corrective treatment, patient was placed in Abbott corset, but there has been an almost complete relapse to original condition.  |
| 6.       | E. L. | 15  | F.  | Severe              | Right dorsal and left lumbar             | 1 yr.                 | Slight amount of discomfort; occasional vomiting; compression of right side of chest.                        | Moderate improvement    | Moderate improvement           | Moderate improvement   | Still under active treatment; travels distances without difficulty. Prospect for further improvement good.   |
| 7.       | L. Y. | 12  | F.  | Moderate            | Right dorsal and left lumbar             | 1 yr.                 | Paresis of left deltoid with inability to raise left arm.  | Very marked improvement | Marked improvement             | Had to go back to work   | Change in appearance of back very satisfactory; looks well and is comfortable.   |
| 8.       | H. R. | 7   | F.  | Moderate            | Right dorsal and left lumbar             | 4½ mos.               | Slight excoarication of skin over the deformity. Compression of right side of chest. Moderate pain in chest. | Improvement             | Improvement                    | Had to go back to work   | Travelled long distances to hospital. Could eat and sleep well.  |
| 9.       | D. O. | 13  | F.  | Severe              | Right dorsal and left lumbar             | 4½ mos.               | Sore under left arm; slight general discomfort for few days. Appetite good; no vomiting.                     | Mild improvement        | Mild improvement               | Had to go back to work   | Patient comfortable; no sores. Attendance very irregular.  |
| 10.      | W. M. | 79  | M.  | Very severe         | Right dorso-lumbar curve and left lumbar | 10 mos.               | Slight general discomfort. Insomnia for a few nights. Slight pain in chest.                                  | Marked improvement      | Moderate improvement           | Had to go back to work   | S shaped curve. Lumbar curve exaggerated during treatment. When brace was removed there was a relapse to original condition. Travelled distances well and attended school during treatment.                |
| 11.      | H. P. | 16  | M.  | Very severe         | Right dorso-lumbar curve                 | 3 mos.                | Insomnia and moderate discomfort. Small sore under left arm. Numbness in left arm.                           | Improvement             | Mild improvement               | Had to go back to work   | Dorsal deformity high. Still under treatment.  |
| 12.      | S. L. | 13  | F.  | Severe              | Right dorsal and left lumbar             | 1 yr.                 |  | Mild improvement        | Mild improvement               | Had to go back to work   | Was able to attend to a considerable amount of housework while in brace.   |
| 13.      | C. K. | 15  | M.  | Moderate            | Right dorsal and left lumbar             | 4½ mos.               |  | Mild improvement        | Mild improvement               | Had to go back to work   |  |
| 14.      | M. B. | 24  | F.  | Moderate            | Right dorsal and left lumbar             | 8 mos.                |  | Moderate improvement    | Moderate improvement           | Had to go back to work   |  |

| Case No. | Name   | Age | Sex | Degree of Deformity      | Distribution of Deformity                     | Duration of Treatment | Complications  | Clinical Appearance       | Results X-Ray Finding      | Reason for Discontinuing Treatment | Remarks  |   |
|----------|--------|-----|-----|--------------------------|---|-----------------------|--|---------------------------|----------------------------|------------------------------------|--|---|
| 15.      | S. B.  | 13  | F.  | Moderate                 | Right dorsal and left lumbar                  | 6 mos.                | Insomnia for a few days. Slight compression of right side of chest.                            | Mild improvement          | Mild improvement           |                                    | Lived out of town and attendance very irregular. Very comfortable; eats and sleeps well. Bands tightened very infrequently.  |   |
| 16.      | 1. C.  | 17  | F.  | Moderate                 | Right dorsal and left lumbar                  | 5 mos.                | Slight compression of right side of chest. Insomnia and pain in chest first few days.          | Moderate improvement      | Almost complete correction |                                    | Took this patient about two weeks to get used to brace; since then has been able to travel with comfort. Looks and feels well. Outlook for further improvement good. |   |
| 17.      | 11. P. | 17  | M.  | Severe                   | Right dorsal and left lumbar                  | 4½ mos.               | Compression of right side of chest. Pain in chest and left arm for about one month.            | Marked improvement        | Marked improvement         |                                    | This patient's deformity was very rigid and the improvement is considerable. Looks and feels well.   |   |
| 18.      | T. P.  | 11  | M.  | Severe                   | Right dorsal and left lumbar                  | 6 mos.                | Insomnia and slight dyspnea during first week. Slight excoriation of skin on deformity.        | Mild improvement          | Very marked improvement    |                                    | After the first week, he has felt very well; attends school regularly. The X-ray shows almost complete correction. Home surroundings unfavorable.                    |   |
| 19.      | A. K.  | 10  | F.  | Very severe              | Left dorsal and right lumbar                  | 1 yr.                 | Sore under right arm. Stiffness of right shoulder.   | No improvement            | No improvement             |                                    | No improvement   |   |
| 20.      | S. K.  | 12  | F.  | Severe                   | Short right dorsal and long left dorso-lumbar | 10 mos.               | Insomnia, discomfort; pain over abdomen under special band. Numbness and tingling in left arm. | No improvement            | No improvement             |                                    | Severe pain across abdomen and no improvement  |   |
| 21.      | M. A.  | 14  | F.  | Moderate                 | Right dorsal and left lumbar                  | 4½ mos.               | Sore under left arm. Numbness in left arm.   | Mild improvement          | Mild improvement           |                                    | Sore compelled temporary interruption of treatment   |   |
| 22.      | A. M.  | 19  | F.  | Very severe "razor back" | Right dorso-lumbar                            | 10 mos.               |  | No change                 | No change                  |                                    | No improvement   |   |
| 23.      | M. S.  | 11  | F.  | Very severe "razor back" | Right dorso-lumbar                            |                       | Pain in chest; insomnia and dyspnea. Sore under left arm.                                      | No change                 | No change                  |                                    | No improvement   |   |
| 24.      | M. W.  | 15  | M.  | Very severe "razor back" | Right dorso-lumbar                            | 1 yr.                 | Slight discomfort.   | No change                 | No change                  |                                    | No improvement   |   |
| 25.      | G. H.  | 13  | F.  | Very severe              | Right dorsal and short left lumbar            | 4 mos.                | Sore under left arm and slight one over deformity. General discomfort; numbness in left arm.   | No change                 | No change                  |                                    | No improvement   |   |
| 26.      | J. S.  | 17  | F.  | Severe                   | Right dorsal and left lumbar                  | 2 mos.                | Pain in back and front of chest. Insomnia.   | Mild improvement          | Mild improvement           |                                    | Intolerance  |   |
| 27.      | E. F.  | 17  | F.  | Very severe              | Left dorsal and right lumbar                  | 6 mos.                | Insomnia and general discomfort.   | Mild improvement in brace |                            |                                    | Discomfort and lack of sufficient improvement  | Severe deformity following infantile paralysis. Marked compensatory curve in cervical region. Patient intolerant. |
| 28.      | S. M.  | 14  | F.  | Moderate                 | Right dorsal and left lumbar                  | 1 wk.                 |  | Mild improvement          |                            |                                    | Interfered with attendance at school   | Attendance very irregular. Lost track of him.   |
| 29.      | 11. R. | 6   | M.  | Moderate                 | Left dorsal and right lumbar                  | 3 mos.                | General discomfort   | Mild improvement          | Marked improvement         |                                    |  | Looks and feels good. Travels easily. Still under treatment.  |
| 30.      | M. L.  | 15  | M.  | Moderate                 | Right dorsal and left lumbar                  | 1 mo.                 | Insomnia first few nights. Slight compression of right side of chest.                          | Moderate improvement      | Marked improvement         |                                    |  |   |

*Discussion.*

DR. REGINALD H. SAYRE, New York City: I do not think there is any question but that the application of force to the body curve and anterior position is an essential thing in correcting rotation of the spine. After Abbott read his paper about jackets, I wondered why I had been so foolish and did not think of it myself. Dr. Kleinberg's brace is an admirable application of force in a given direction. I believe that in some cases it would be more applicable than the Abbott brace, and in others, as I recollect, as I see in these pictures, especially the razor-backs, he cannot get pressure in the direction in which he requires. One can do better with a jacket than with an apparatus.

DR. HOWARD L. PRINCE, Rochester: I was much interested in Dr. Kleinberg's description of this brace. The great question in the treatment of these cases is, what is the ultimate prognosis going to be? In all our treatment we are depending upon Wolff's law to maintain the corrected position, after we have maintained it by jackets or brace for a long time. Almost 90 per cent of the cases of scoliosis which I see, I can demonstrate without any question that there is a foundational defect in the spine in the lumbo-sacral region. This tilts and rotates the base of your column and its action is constant during the patient's erect life. It is calling for the developmental changes according to Wolff's law as much as any of our corrective efforts. There seems to be little question but what we can improve most cases of scoliosis by means of the Abbott jacket or with this brace. Perhaps this brace has the advantages Dr. Kleinberg has outlined. With the foundation inequality acting all the time after we have removed the corrective apparatus, what is going to be the result. I don't know, nor does any one else. I believe, however, that we will always lose some of the gain we have made, and that it is impossible to actually correct and maintain in correction these cases. At present my feeling is that a severe case must be held in a brace or jacket permanently. In mild cases our greatest hope lies in thorough gymnasium training, with the idea of preventing the development of over-compensatory curves, which occur in the dorsal region.

DR. HENRY LING TAYLOR, New York City: One must admire the optimism of Dr. Kleinberg's paper, which is one of the sanest I have ever heard on the subject. Without optimism one does not go ahead at all. The question of congenital deformities has been much emphasized in the last few years, and unquestionably is serious in certain cases. I am perfectly convinced that the pelvic slope alone is a very minor factor in the production of scoliosis because we find it is extremely rare for a case of one-sided hip joint disease or congenital dislocation to get up a rotary lateral curvature. A short leg is a

small factor is producing permanent lateral curvature. In the milder degrees of congenital malformation at the lower end of the spine the condition should be very much the same, but unquestionably in some cases it is a serious matter.

DR. KLEINBERG (closing): There are one or two points I would like to talk about, and among them, what can we expect of those patients whom we have treated for varying periods of months or even years, how much correction can we expect them to retain? A year and a half ago I treated a series of six cases which I submitted to the American Orthopedic Association, and in the early part of the month I reviewed this series, and out of six cases four had definitely retained the improvement. None of these cases had been corrected, but they had been definitely improved, and the general appearance of the patients was excellent. All of them had been under observation continuously, wearing plaster corsets and exercising regularly. It is a serious question as to whether the same amount of correction could not have been obtained by other methods.

One point brought out by Dr. Prince deserves serious consideration, and that is malformation in the lumbo-sacral region. We made a careful study of many X-ray plates in this regard, and while I cannot give you accurate statistics now, I can thoroughly agree with Dr. Taylor's remarks that in a good many cases there was severe deformity in the dorsal region, the upper middle or lower, and no sign of any malformation in the lumbo-sacral region. I have a series of a dozen cases of scoliosis where the lumbar spine was absolutely in the median line and from the radiographs there does not seem to be any malformation at all of the last lumbar vertebra.

### REINFORCING PARALYTIC FLAIL JOINTS BY INTRA-ARTICULAR SILK STRANDS TO LIMIT MOTION AND INCREASE STABILITY.\*

By BERNARD BARTOW, M.D.,

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**T**HIS plan, proposed by the writer about three years ago,† contemplates fastening the paralytic flail joint by means of paraffined silk strands, inserted within the joint, to limit motion and promote stability for weight carrying.

Tunnels are drilled in the articular ends of the bones, the drill being at the same time carried into and through the joint. Through these tunnels strong paraffined silk strands are drawn. Small puncture incisions are made in the soft tissues at points where the drill enters and emerges from

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 28, 1915.

† *Am. Jour. Orth. Surg.*, May, 1913.

‡ *N. Y. Med Jour.*, May 3, 1913.

the bones. Between those points, (e.g., in the knee), the soft tissues are tunnelled close to the articular ends of the bones and capsule, and one end of the silk strand is then drawn back by means of a leader to the point of entrance—both ends being tightly tied. One-half of the strand therefore lies in the tissues external to the bones, but whenever practicable the return strand, for the purpose of tying the ends, should also pass through the capsular tissue of the joint.

Inserted in the anterior or posterior aspect of, e.g., the knee, and tightly fastened, the silk strand acts as a check band to maintain the leg in either extension (in drop knee) or flexion (in genu recurvatum or "back knee"), according to the situation of the paralyzed groups.

The paraffined strand has also been inserted in the shoulder joint by drilling through the acromion from above, and then through the head of the humerus.

The purpose in this instance is two-fold: (1) to suspend the humerus from the acromion to relieve the deltoid muscle of arm weight; (2) the silk strand acting as a suspensory ligament also pulls the head of the humerus into close contact with the glenoid cavity so that movements in scapula and humerus may be coincident. Obliteration of the space below the tip of the acromion occurs incidentally.

A somewhat similar technic has been adopted for flail conditions in the hip joint. It has been employed in only two instances in that location and with an interval too short to wholly determine its effect at this time. In that joint it is necessary in the insertion of the strand, owing to the depth of the joint, to expose it by flap operation. Experience will probably also show the value of disarticulation for facilitating the operation. In all other locations the incisions are little more than punctures, and the operation is practically subcutaneous in character.

In addition to the mechanical effect exerted by the silk strand in limiting motion, the joint is further reinforced by exudates resulting from surgical trauma and reaction within the joint. This is important for thickening the capsular tissues and investing the silk with scar tissue converting it into an artificial living ligament.

Much dependence is placed on this effect of surgical trauma, which, though only incidental to the insertion of the silk, is excited with a definite purpose.

After the limb has been in use for a time, and especially when the limiting process has been employed in the knee, the tension of the silk becomes somewhat relaxed, permitting the leg to resume some of its former mobility. Scar tissue production in the meantime has become effective, however, for steadying the joint, so that higher muscles can balance body weight on the limb. This can be done when even a considerable degree of flexion motion has recurred, although there may be no actual muscle control of the joint.

In the shoulder a less degree of limiting action

occurs from this procedure than in the knee, but it is not so necessary in the shoulder—chief importance there being the maintenance of the head of the humerus in closer relation with the scapula. This effect of the suspension, the main purpose in the plan, furnishes a point of resistance for the scapular and other associated muscles to assist in functioning the arm. In both knee and shoulder the chief aim in the procedure, for restoring a useful degree of function, rests on the opportunity afforded muscles, that are only in part, or not at all, involved in the disability, to supply power in a compensatory manner. When flail conditions are present this is mechanically impossible; re-establishing resistance in the involved joint becomes therefore the first step in that direction.

When no available muscular power remains it is then only a matter of providing stability in the joint sufficient for weight bearing. This may be effectively induced by several repetitions of the procedure at suitable intervals, if the first operation has not been sufficiently restraining.

Immediately following the operation the acute surgical reaction in the joint is controlled by immobilization with plaster of paris cast for the knee, hip or ankle, as the case may be, but only the usual soft bandage dressing is needed for the shoulder joint.

Protection must be continued for three or four months when the knee is the site of the operation. Prevention of pain from leverage of the extended leg is the most important item in fixation, that being the chief source of discomfort even when acute excitement has subsided.

Protection of the knee should be maintained by plaster casts until body weight and leverage strain can be borne painlessly. This period also corresponds to the time usually necessary for acquiring a substantial amount of resistance in the joint by organization of exudates, sufficient for effective efforts in performing locomotion.

The shoulder, following suspension of the humerus, requires only a short period of bandage and sling protection—usually about three weeks. As soon as the patient can be induced to use the hand, and incidentally make movements of the arm with the higher muscles, he is encouraged in these efforts, the hand, meanwhile, being supported by an elastic sling until sufficient control is established in movements of the forearm. This is the only form of appliance that has been used in this connection.

The employment of intra-articular silk limitation as an *exclusive* method of treatment has been mainly for flail conditions in the knee and shoulder, and hip.

In the different forms of talipes this plan is only accessory to tendon transposition, tarsal remodeling, etc., and for those conditions has been employed usually in combination with other procedures.

Exception may be made in the flail foot whose muscular impairment is total, in which no muscle

groups appear to have escaped, or have not as yet recovered any of their control of foot movements.

In the knee and shoulder and in one instance in the hip joint, and also in the variety of talipes just mentioned, this procedure has given a dependable amount of stability for control of motion and supporting body weight. This has permitted development to proceed on physiological lines inasfar as recovery was possible—brace protection as an accessory measure having been quite generally omitted.

Shoulder paralysis has responded to the effects of this plan of treatment with greater readiness than any other variety. Often there has been a surprisingly rapid improvement in forearm and hand functions soon after fastening up the humerus. This may be explained as due to better mechanical conditions for lower arm movements, to the influence of associated muscles in furnishing a wider range of action, and to the regenerating influence imparted by will impulses that may now be effectively transmitted to the long disabled part.

The importance of disuse in causing continued depreciation of muscles following the initial disorder is strongly emphasized by the quick response in the hand and forearm groups when these improved conditions are supplied for their provisional exercise.

The main ideas in this plan of treatment may be stated to be an attempt to provide better opportunities than are contained in the available operative methods for relieving these forms of disability, and also their timely employment to lessen the amount of muscular deterioration depending on disuse of a limb.

In disability of both short and long duration, this procedure has given results of value suggesting ample reasons for its continued use in either the early or late period of residual paralysis. From its simplicity it becomes available at an earlier period after the onset of the disease, and in patients of younger age, than the operative procedures that have heretofore been employed, thereby possessing advantages of practical value in time saving, so important in the conservation of damaged muscle power.

The purpose kept in view has been to formulate a plan consistent with use in both the early and late periods of residual paralysis and also in very young patients if desired. The procedure does not mutilate the joint, and as it causes no interference with the muscle supply, does not jeopardize the chance of improvement or recovery by natural processes inasfar as this is possible.

Anchylolysis, unless desired, is not the outcome of this procedure, but limitation only. At the same time the procedure possesses a range in its application whereby its repetition will safely provide additional limitation of any required degree.

In about 150 cases in which this plan has been

used in the Children's Hospital there has been no mortality, and in no instance an infection of a joint.

## THE PRESENT STATUS OF TUBERCULIN THERAPY IN OCULAR TUBERCULOSIS.\*

By WALTER BAER WEIDLER, M.D.,

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THE first "bacterial vaccines" were introduced as a prophylactic measure against smallpox, by Edward Jenner in 1798. The value of this form of vaccine has been proven beyond a doubt.

Koch's discovery of the tubercle bacilli as the germ cause of tuberculosis was soon followed by his ingenious attempt to cure this disease by a vaccine made of the same bacteria that caused it.

I think that the medical profession are all agreed that tuberculin has a most limited sphere of usefulness in general and pulmonary tuberculosis, as a therapeutic measure.

In regard to its value as a diagnostic measure, I think it can be safely said that we are well agreed that a positive reaction to tuberculin indicates the presence of a tubercular foci, old or new, or of tubercular toxins somewhere in the body.

It is also true that the tubercle bacilli as the etiology of eye diseases is more generally accepted than it was ten or twenty years ago, and many of the previously obscure lesions of the retina and the choroid are now comparatively simple to diagnose and treat.

This new form of treatment for the manifestations of tuberculosis affecting the different tissues of the eye has had, and is still having a difficult fight for acceptance. The earliest form of treatment for ocular tuberculosis was surgical, but as soon as we realized that ocular tuberculosis is usually a local expression of a general disease, we have almost entirely abandoned surgical means, except in the hopeless cases, such as cases of threatening perforation of intraocular tuberculosis; ocular tuberculosis involving the optic nerve, and the miliary tuberculosis of the iris with secondary painful glaucoma.

The therapeutic value of tuberculin depends almost entirely upon its immunizing power to set free in the body special agents known as "anti-bodies," which combat the tubercular manifestations present in the eye.

The most essential factors in successful treatment of ocular tuberculosis is first of all, a slow and gradual increasing of the dose which may extend over weeks and months; careful preparation of the tuberculins; the sub-cutaneous injection rather than the intramuscular; and the local and general treatment of the ocular lesion

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with the same means that were employed before tuberculin was added to our therapeutics.

Koch's original hypothesis was, that the reaction was due to a tissue necrosis, and that the tuberculin had a special selective action on this tuberculized tissue, causing it to slough, and that this necrotic tissue was the medium that gave the reaction to the tuberculins.

As is well known to all, Koch made his great error in giving too large a dose and too oft repeated, causing thereby most severe reactions and in some cases death, bringing the most violent opposition to its use in the treatment of any form of tuberculosis.

The second era of the tuberculin therapy was much more favorable in its results and ophthalmologists owe a great debt to the patient and persistent work of von Hippel, who in 1900 to 1904 was able to prove that tuberculin could be used with perfect safety, and the results following its use were most satisfactory.

Hertel's latest monograph on Tuberculin Therapy mentions 151 observers who have used and studied the results of tuberculin in ocular tuberculosis, and out of this number only twenty-three can be regarded as unfavorable toward its use and its value.

My own observations have extended over a period of three years and my series of 117 cases include the affections of the conjunctiva, the cornea, the sclera, the iris, and the ciliary body, the retina and the choroid. Many of these cases must be ascribed to a doubtful etiology and the author does not mean to claim that all of the cases treated and cured by tuberculin were undoubted cases of ocular tuberculosis. It is interesting and important to note that in not a single case where the reaction was positive to tuberculin as a diagnostic measure, did we fail to stop the progress of the ocular lesion, except in one case.

Koch's "original tuberculin" was the result of his work on guinea pigs. He injected into healthy guinea pigs large quantities of the sterilized cultures of the tubercle bacilli, rubbed up in water, and found that these injections gave rise to local suppuration, but when injected into tuberculous animals even small quantities rapidly produced death.

He later found that death could be prevented and improvement obtained by the methodical use of high dilutions. When the emulsified bacilli were used they were not absorbed at the site of the injection, but remained there and gave rise to local abscesses.

He concluded from this that the curative substance of the tuberculin must be dissolved by the tissue juices while the substance causing abscess formation remained undissolved, or dissolved very slowly.

The old tuberculin was made from the pure cultures of the tubercle bacilli which he had grown from four to six weeks on a 5 per cent glycerin broth. He filtered and concentrated the

filtrate to one-tenth of its volume, thus obtaining in a 50 per cent glycerin medium the soluble bodies secreted by the tubercle bacilli.

This preparation proved to be too toxic for therapeutic use, but is used today in its original form for all of our diagnostic tests. After considerable work with old tuberculin and finding that the high toxicity of this preparation was a great obstacle, he endeavored to obtain a substance which would exert the same curative and immunizing influence without the harmful effects, and he wished to obtain a solution that would immunize the individual against the bacterial toxins, and also against the tubercle bacilli itself.

This second solution was prepared in the following manner: Young and highly virulent cultures are dried in vacuo and then ground until the specimen shows no intact bacilli. To the pulverized bacilli distilled water is added and the mixture centrifuged. The upper two layers so obtained are decanted off and discarded.

The residual deposit is again dried, ground, treated with distilled water and centrifuged, the supernatant fluid being decanted off and preserved. This process is repeated until no deposits remain. The different fractions of fluid (with the exception of T. O.) are then mixed for the new tuberculin T. R.

This solution is really an emulsion or suspension of extremely minute particles of the tubercle cell substance. It is readily absorbed and does not cause abscess formation, and is used only as a therapeutic agent.

Koch's last preparation of tuberculin is undoubtedly his best as a therapeutic measure. It was the outgrowth of his work on agglutination. He found that the agglutinating power of the blood was increased more rapidly by the injection of dead tubercle bacilli than by any of his previous preparations, and was thus led to prepare a substance of a much higher immunizing potency.

This solution is called the bacillary emulsion. It consists of an emulsion of one part of dried pulverized bacilli in one hundred parts of distilled water, to which one hundred parts of glycerin are added. This emulsion is analogous to the other vaccines consisting of a sterilized emulsion of bacteria, and may be used for its curative and immunizing properties. It must be kept in mind that the immunity produced by the tuberculins is only an antitoxic one, bacillary immunity in tuberculosis has not so far been produced.

The bacillary emulsion, however, seems to come nearest to this, as it contains besides the tuberculin, also the bodies of the bacilli. It is the preparation which we have used in our treatment of all of our cases. It seems to be very slightly toxic and only rarely have we gotten severe reactions, and those have nearly always been local in their manifestations. We have ascribed them to other causes rather than to the solution.

We have on several occasions, seen a number of our patients give marked local reactions forty-eight hours after their injections. Strange to say all of the patients had different sized doses of different dilutions of tuberculin. It would seem that the syringe or the technique had been at fault rather than the emulsion.

In using tuberculin as a diagnostic measure, we have obtained our best results in the von Pirquet test by making our scarification very superficial.

We use a small sharp screw driver which is about three millimeters in width, and make a rotary movement with sufficient pressure to remove the outer layers of the skin which has been cleansed with alcohol. Three such areas are made on the forearm about three-quarters of an inch apart. On the upper scarified area the crude old tuberculin is gently rubbed; the middle one is untouched and is used as a control; on the lower one a 50 per cent solution of old tuberculin is gently rubbed.

This is allowed to dry and a dressing and bandage is applied and the patient returns in forty-eight hours for inspection. Our reactions obtained from tuberculin as a diagnostic measure have been at times difficult to understand.

The subcutaneous test consists in recording the temperature for forty-eight hours and then injecting one-half milligram of old tuberculin, and if no reaction is obtained this is continued until five milligrams are given.

In some of the cases of phlyctenular conjunctivitis and phlyctenular keratitis, we have gotten the most severe local reactions. These same cases as a rule did not require a long period of treatment to immunize the patient and cure the ocular manifestations of the disease.

In contrast to this series of cases, the cases of miliary or conglomerate tubercles of the iris and the ciliary body usually gave very slight local reactions to the von Pirquet, and in some of these cases when the subcutaneous injection of old tuberculin was given for diagnosis, it was followed by a very slight rise of temperature.

This group of cases on the other hand, required a long course of treatment. Many of them extending over a period of from four to six months, and finally taking milligram doses of the bacillary emulsion without the slightest discomfort, and the iritic lesion gradually absorbing and disappearing.

It is a generally accepted fact that tubercular individuals are very sensitive to the smallest dose of tuberculin, and will react to this agent when it is applied to the conjunctiva, the skin, or when it is injected subcutaneously; whereas a perfectly healthy individual will not react even to a comparatively large dose.

We have seen quite a number of cases who had suspicious ocular lesions that did not react positively to the von Pirquet or to the subcutaneous test. These patients, ranging from 6 to 40 years of age, including a number of colored individuals.

This striking hypersensitiveness of the tuber-

culous individuals suggests some form of anaphylaxis. The individual who at some previous time has been sensitized by the tubercle bacilli, reacts later to a minimal dose of the same antigen.

When Ch. Richet and P. Portier published their first paper entitled "De l'action Anaphylactique de Certains Venins" (Bull. Soc. Biol. 1902), stating that dogs injected at various intervals with extracts of medusæ are very much more sensitive to the second injection than to the first, the medical world barely dreamed of the enormous value of this discovery to biology, especially to medicine and more particularly to ophthalmology.

Definition: Anaphylaxis, says Richet, is the opposite of protection (phylaxis or prophylaxis) and constitutes a condition in which the cells of the animal organism are so modified by their first contact with a heterogenous albumin as to react with a greater intensity when the same organism is confronted a second time with the same heterogenous albumin. A certain time or period of incubation must elapse after the first introduction of the foreign protein to the body before the organism is sensitized. Heterogenous albumin or foreign protein is one which is obtained from an animal of a different species. The term anaphylaxis designates "the curious property possessed by certain poisons of augmenting, instead of diminishing the sensibility of the organism to their repeated action" (Richet L'anaphylaxie, 1902). Schoenberg's, N. Y. State Journal, October, 1914).

When making our tuberculin tests in the clinic, we have been limited to the von Pirquet test alone, but in nearly all of our ward patients we have always supplemented the von Pirquet with the subcutaneous injection of old tuberculin.

The focal reaction which manifests itself by increasing the inflammatory process in the eye, have been few. In several cases this has been noted, and it is on this reaction alone, that many rely. It is because it is absent in so many cases that the argument has been raised that we are not dealing with an ocular manifestation of tuberculosis, but it must be remembered that the primary focus of infection may not of necessity be in the eye. I think the hypersensitiveness of the individual and the kind of toxins present are determining factors in the focal reaction, and previous treatment by tuberculin will influence this reaction.

The local reaction usually consists in a slight redness of the skin and subcutaneous tissues, around the area of the scarification or the injection. At times we may have pronounced redness, swelling, heat and tenderness with the formation of a large scab at the area of scarification looking exactly like a true vaccination scab from cowpox inoculation. Some of our most pronounced reactions were due, no doubt, to a mixed infection. We have not had a single case of this sort in the past two years.

The general reaction consists in a rise of temperature, usually within three to six hours after

the injection, of from one to three degrees with the usual symptoms accompanying a slight fever. I have never seen a severe reaction with vomiting, headache and eruption on the body, and I believe in these cases they must have had an impure or a decomposed tuberculin to give such violent reactions. The great many positive reactions to the von Pirquet test has brought great discredit upon this test, and many regard it of slight or no importance whatsoever. I think in the light of investigation, it must be admitted that many more individuals than we have ever fancied have had some form of tuberculosis at some period in their life.

Hamburger's studies of 848 children from the newborn infant up to 14 years of age, gave an average of 40 per cent who have been infected, and as one can readily see that children of this age are less exposed to the disease, and its presence in many cases must have been due to inheritance. It might be reasonable to suggest that it is this tendency or hypersensitiveness that is transmitted from parent to offspring.

This is quite true in syphilis, why is it not true in tuberculosis, where there may be a most active strain of tuberculosis in the parent? This may help us to understand more clearly what we mean by scrofulosis, which term has always been used in such a general, vague and inclusive manner.

Those of his series up to three months of age showed 4 per cent with a steadily increasing ratio as the age increased. Those between the age of eleven to fourteen years of age showing a percentage of seventy degrees. These results were obtained from his studies post mortem, and must be taken with some degree of doubt, due to possible errors of observation.

A negative reaction to tuberculin has usually been accepted as an indicator that the individual has not been, and is not affected by tubercular toxins; however, there are exceptions to this rule and they must be borne in mind. We may not get a positive reaction in an acute and violent infection; or in the last stages of a general tubercular disease; or during the period of inoculation of the disease; and in some patients who have been rendered immune by a long course of treatment with tuberculins.

It has been suggested in way of explanation that failure to obtain reaction in this type of cases, is due to the fact that the body cells of the individual are not in condition to produce antibodies which are the necessary factors in securing a reaction.

The tubercular affections of the conjunctiva are comparatively rare, especially in this country, but much more frequent in Europe where the hygienic conditions are so wretched. The true tubercular ulceration due to a direct local inoculation; the miliary tubercles, hypertrophic granulations or lupus of the conjunctiva, I have not seen during the period of this work. One case of lupus erythematosus affecting the skin of the eyelids in a Jewess 30 years of age, gave a negative von Pir-

quet and was never given tuberculin treatment, but a cure, and I say cure in a limited degree, was affected by means of carbonic snow.

Whether phlyctenular conjunctivitis should be regarded as a manifestation of tuberculosis has been the subject of a great deal of discussion, and there is still a great diversity of opinion regarding the etiology of this disease. Depending upon the investigators, the von Pirquet reaction is positive, in from 70 to 90 per cent of these cases. In discussing Dr. Theobald's paper on phlyctenular ophthalmia at Atlantic City in June, I said that I thought it was a great mistake to assume that all of the cases of phlyctenular ophthalmia were due to tuberculosis, but it was also a mistake to say that none of these cases were due to tuberculosis. Bruns stated three years before, that they were all due to an auto intoxication.

To argue that because the tubercle bacilli has never been isolated in a phlyctenule is sufficient to refute the tubercular theory that any of the cases of phlyctenular ophthalmia are due to tuberculosis, I think is inconsistent reasoning. The same investigators will diagnose cervical adenitis as tubercular without the presence of tubercle bacilli. I think that a great many of the cases of cervical adenitis are tubercular without the presence of tubercle bacilli. I think that a great many of the cases of cervical adenitis that get well by local and general medication are not due to the direct presence of the tubercle bacilli, in the gland, but are due to a general tubercular toxemia the result of some inherited or acquired strain of tuberculosis.

I do not believe that phlyctenular ophthalmia is due to tuberculosis in every instance, but I do know that a very high percentage of these cases will show a positive von Pirquet and a general reaction to tuberculin. Furthermore, many of these children show enlarged glands; joint affections; and we often get a family history of tuberculosis.

The phlyctenular lesions of the eye, I believe, are a local manifestation not due to the direct action of the tubercle bacilli, but due to the action of a tubercular toxin or end toxin.

It is not always possible to demonstrate the tubercle bacilli in some of the chronic ocular tubercular diseases with pulmonary lesions demonstrable (Verhoeff's case, *A. M. A. Journal*, July 4, 1914, Vol. LXIII).

The treatment of forty cases of phlyctenular ophthalmia with tuberculin by Davis & Vaughn show a very much larger and quicker percentage of cures than by the old methods heretofore employed. Tivnen reports a series of fifty cases with 64 per cent of cures and 24 per cent improved, and Herrenscharf reports a series of 103 cases with 101 cures, the two failures were in cases where there was great involvement of the cervical glands. I have had several cases under treatment in which there was both glandular and joint involvement and they all responded well to the treatment. However, I do

think that recovery is hastened by an early removal of the glands. In the first two years of this work with tuberculin in phlyctenular ophthalmia, no local or general treatment was given and no attention was paid to the diet or hygiene. We are now convinced of the excellent results obtained with tuberculin, and believe that the local and general treatment is useful, and that the diet should also be attended to.

*Keratitis, Superficial and Deep.*—The greatest number of cases that we have treated with tuberculin have been affection of the cornea. These have been mostly superficial keratitis affecting the epithelial layer and Bowman's membrane and rarely or never causing ulceration. Several cases have been true interstitial keratitis, and in one there was a large sloughing ulcer involving the middle third of the cornea. I have seen, during these observations, several cases of episcleritis and scleritis, in which I was able to secure a positive von Pirquet and a general reaction to the tuberculin. Torek claims that from 90 to 95 per cent of all cases of epi and deep scleritis are due to tuberculosis, but I think that this is too high. We all see at our clinics many cases of keratitis in children which always requires a very long treatment with atropine, diet and tonics, and which always show a great tendency to recurrence. A great many of this type of cases were cured by the "old form" of treatment, but there are a number, however, that I believe would be greatly benefited by the tuberculin injections, and I especially direct your attention to them.

Again in those cases where there is a direct history of tuberculosis in the family; where there is a history of recurrent eye trouble and in those pasty colored, pale, overfat children, whom we have always recognized as not good healthy, vigorous children, it is in this group, I also feel that tuberculin therapy is absolutely indicated and of great lasting good in raising and maintaining the opsonic index and establishing an immunity.

In spite of a long treatment of tuberculin in some of these cases, we have seen recurrences of the ocular inflammation. When they are again given tuberculin injections, it is only a matter of three or four injections and then active reactions immediately follow the tuberculin ocularly, locally and generally.

#### HISTORY.

*Case 1.*—M. D., white, aet. 7, family history negative, child has had trouble with eyes for past two and one-half years, and had been treated during this period in the usual manner with no lasting improvement. When seen by me, there was great photophobia and lachrimation, and a great number of deep opacities and fresh infiltrates in the cornea of both eyes, more in the left. There was a large, deep ulceration involving nearly half of the left cheek. The child had a pasty, pale doughy complexion, and was

over fat for her age. Wassermann test and urine negative. A very severe reaction to von Pirquet, and was admitted to the hospital and was given tuberculin injections. Relief of all local irritation, gained weight, ulceration of the face cleared up within two weeks and was discharged after two months of treatment. The treatment was continued in the hospital until we obtained several local reactions to injections.

This child showed the tendency to recurrence of the local eye condition and was given injections at clinic with all symptoms disappearing after a week or ten days of treatment.

*Case 2.*—P. P., white, aet. 10, family history negative (?) child has had trouble with the left hip for four years or longer, which looked like a tubercular osteitis. There is an open sinus still seen discharging pus. Came to the clinic on account of the inflammation of both eyes, and the school nurse brought her because she could not do her school work. There was photophobia and lachrimation, and a very well marked case of interstitial keratitis in both eyes. The Wassermann test was positive and patient had well defined Hutchinson teeth. The von Pirquet gave a very decided reaction. This case was put on tuberculin and was given injections for a period of three months, but the course of treatment was most unsatisfactory, on account of the irregular attendance at the clinic. The local ocular condition was greatly improved, as was the general condition of the patient. She was admitted to the ward and a subcutaneous injection given and temperature rose to 104 degrees. After her admission to the hospital, I ordered the continuance of the tuberculin injections and also the use of mercurial inunctions.

The child gained weight, the sinus of the hip discharged much less and gradually closed. The corneas gradually cleared. This was undoubtedly a double infection which was greatly improved by the use of the mercury and tuberculin.

Previous to the use of tuberculin injections in *tubercular iritis* and *iridocyclitis* the course of these cases was often a matter of months and years, with usually the entire loss of vision and often the enucleation of the eye. We have treated five of these cases with very excellent results. In one of the cases, there was no restoration of the vision which was reduced to light preception when we first saw the case. At the present time two have normal vision in the affected eye, and two have one-half normal vision after treatment. It is this type of cases that we have had most excellent results with the tuberculin.

Roemer says that he is not convinced that the therapeutic capacity of tuberculin in the treatment of tuberculosis of the iris and ciliary body has been and still is over estimated. I think that we see our cases much earlier than they do on the continent, and that, therefore, our cases are not as severe in the degree of

ocular involvement, and we get better results from our treatment.

*Case 3. Irido Cyclitis and Uveitis.*—K. K., aet. 26, Bohemian, family history negative, general health always good. About a year ago O. S. was enucleated at Mt. Sinai Hospital on account of a most severe irido cyclitis which they feared, at the time, might cause sympathetic ophthalmia. There was a history of the patient having been struck in the left eye with a baseball. The case came to our clinic at the Manhattan Eye and Ear Hospital at which time the right eye was giving her a great deal of pain and discomfort.

O. D. pronounced photophobia and lacrimation, very marked pericorneal injection and ciliary tenderness. Iris was muddy and the pupil irregularly oval, long axis 135 degrees. Vision was reduced to counting fingers at ten feet. I consulted with the surgeon who enucleated the left eye and he said that there was undoubtedly a specific history which I was not able to secure, and the Wassermann test that we made was negative. She was admitted to the house three days later and a von Pirquet which was done in the clinic gave a most violent local reaction with a slight rise of temperature. The patient was given a subcutaneous test which was strongly positive and she was put upon the tuberculin treatment and the local use of atropin in the eye. There was a consistent, gradual improvement of vision with a gradual decrease of all inflammatory signs in the eye. The vitreous gradually clearing after seven weeks of tuberculin injections. When she left the hospital her vision with +0.50 axis 180 degrees was 20/20.

The pupil never returned to a central round opening, but I have been able to observe the case for over a year and there has been no return of any trouble in the eye.

*Case 4.*—M. W., white, aet. 7, family history negative, the patient had measles, whooping cough, no convulsions or fits. Child came home from school with a red rash over body, no fever or vomiting but the next day the mother noticed that the left eye was inflamed, the family physician said it was a cold and had settled in the eye. This redness grew less and mother noticed a yellowish red spot in the lower part of the eye, and came to the Manhattan Eye and Ear Clinic with the child, at which time the following condition was noted:

O. S. down and out there was a yellowish area about three by five millimeters in size and two millimeters high, with a number of small dust-like spots in the anterior chamber, and on the posterior surface of the cornea. The heavy yellow exudate in the anterior chamber seemed to extend from the anterior surface of the iris to the endothelial layer of the cornea. It was dense and did not change its position when the eye was moved up and down. There was a slight pericorneal injection, the aqueous was muddy and the iris was discolored. The pupil was par-

tially and unevenly dilated, showing the presence of almost complete posterior synechia. There were several new formed blood vessels running into the mass and over the surface of the nodule. Tranillumination revealed a shadow in the lower half of the eye, which was due to the exudate in the iris, ciliary body and the vitreous. This grayish exudate in the vitreous appeared to occupy the lower and outer one-third of the vitreous body.

Vision O. D. 20/20, O. S. fingers at eighteen inches. Wassermann test and urine negative. A very slight reaction to von Pirquet which was recorded at the time as a negative reaction. The case was treated with atropine, dionin and heat locally, syrup Ferri Iodid was given together with a glass of milk and raw eggs twice a day were ordered, and small doses of calomel. This treatment was persisted in for two weeks, with slight or no improvement in the external appearance of the eye. Another von Pirquet was done with about the same degree of reaction as was obtained at the time of the first test. Tuberculin treatment was started and has been persisted in over a period of six months. The eye condition has gradually improved, notwithstanding the negative reaction. The nodule is gradually decreasing in size; the pupil is dilating and the vision is slowly improving, and the patient has gained weight. The vision, when last recorded, was counting fingers at three feet. The dose of B. E. has gradually increased from 1/100,000 of a milligram to three and one-half milligrams, without any reaction.

The *tubercular affections of the retina and the chorioid* are being diagnosed much more frequently since the introduction of tuberculin.

Marple and Young made a study of thirteen cases of tubercular meningitis at the Babies' Hospital to determine the frequency of chorioiditis in this condition, and they found that in every one of their cases or 100 per cent, there was chorioidal manifestations of the disease. Previous to their report, Stephenson and Carpenter were able to find chorioidal lesion in 50 per cent of the cases studied by them.

*Case 5. Retinitis Exudativa (tubercular).*—Miss J. M., aet. 19, Italian hatmaker, mother and father living and well, one brother died of tuberculosis three years before. The patient says her general health has been good. Seven years ago the cervical glands on the right side were removed, and from the size of the scar, a very radical operation was performed. The glands had broken down before they were removed. Two weeks ago noticed floating spots before the left eye and that her sight was rapidly lowered. No pain in the eye and her general condition was good.

Was seen at the Manhattan Eye and Ear Clinic, and her vision was O. D. 20/15, O. S. 5/200, 02 pupils three millimeters, iris brown

and react to light, accommodation and convergence tension normal.

Ophthalmoscopic examination.—Fine floating opacities in vitreous, rest of media clear, disc oval seven by eight long, axis is 90 degrees. Edges of disc are blurred and optic nerve head is indistinct and pale. In the macula region there are five or six white spots varying from three to five millimeters in size, with a lighter area in the retina surrounding these spots. They are slightly elevated and giving one the impression of an œdema of the retina.

The case was admitted to the ward and treated in the following manner: Rest in bed, pilocarpin sweats, gentle saline purging each morning, atropin and tonics. This was continued for seven days with no apparent change and a von Pirquet was made which was positive, and later subcutaneous test was made with a very marked local and general reaction. Wassermann test and urine was negative. The patient was started on tuberculin treatment. Inside of ten days the œdema of the retina began to clear, the swelling decreased, and the vision gradually and steadily improved. The treatment was given over a period of three months continuously. After one month the vision with a correcting glass (O. S. +0.50 spc. +0.50 ax. 90 degrees) was 20/20, and three months later 20/15.

The ophthalmoscope picture had completely changed, and six months after the beginning of the retinal affection the media was clear, disc oval seven by eight long, axis 90 degrees, scleral ring all around, central excavation small, vessels long, axis 90 degrees. There is an area up and out from the macula with a white center and slight pigment deposit along the lower edge of the retinal endo or perivascularitis.

The case has been under observation from time to time for over a period of two and one-half years with no recurrence. This case was a retinal manifestation of ocular tuberculosis giving positive reactions to all the tests, together with the family history of tuberculosis and a personal history of tubercular cervical glands. The process was much more localized and superficial than the chorioidal affections and the response to tuberculin treatments more rapid. The secondary changes were quite different from the chorioidal lesions, the pigmentation being much less, with little or no exposure of the scleral coat and the vision returning to normal or even better.

*Case 6. Tubercle of the Coroid.*—Mr. C. S., aet. 26, Jew, salesman, family history negative, patient's general health always good. Has worn glasses for the past three years for myopia. He noticed for the past two weeks floating opacities before the right eye and the vision gradually got worse as opacities increased in size and number.

Was seen at the Manhattan Eye and Ear Hospital November 23d, 1914, and an examination

of the eyes revealed the following condition: 02 pupils, three millimeters, iridis blue and reacts to light accommodation and convergence, and the tension normal.

Vision: R. E. 20/50.  
L. E. 20/20.

Ophthalmoscope, right eye: Cornea shows a number of punctate deposits on the endothelial layer, scattered generally over the lower portion. The pupil is dilated with atropin. The upper edge of the iris is ragged and the retinal pigment layer of the iris has a moth-eaten appearance. Dust-like deposits are scattered over the anterior surface of the lens. The vitreous shows spider web-like opacities with many larger ones, more or less immovable. Best seen when the patient looks straight ahead, having a bluish pearly gray color and giving somewhat the appearance of the retained canal of Cloquet. The whole nervehead is indistinct and pale and the margins are blurred. The veins are somewhat swollen and turgid, especially the lower branches. There are several small hemorrhages on the disc head up and out. The retina throughout has a hazy, dirty, dull-red color, and to the nasal side about a disc's diameter from the optic nerve is seen a light pale gray area, eight by ten millimeters, with undefined margins showing the retinal vessels crowding over the top, being somewhat more elevated at the edges than in the center, and around the edges are seen a number of small miliary tubercles. This is especially well seen at the lower edge of the area, and above these little miliary spots, which number eight or ten, is noted the early deposition of the pigment.

The Wassermann test was negative. The von Pirquet was +++ positive, and the patient was admitted to the house and subcutaneous injection of old tuberculin was given which was followed by a local and slight focal reaction.

The patient was put upon bacillary emulsion and the vision gradually got worse until it fell to 20/70. The injections were continued and after two months the fundus began to clear and vision continued to improve. The treatment has been continued for four months and at the present time his vision is 20/30.

Ophthalmoscope examination after four months of tuberculin, right eye: The media is clear, disc oval seven by eight long, axis 90 degrees, scleral ring all around, central excavation small and vessels long, axis 90 degrees. There is an area about two disc diameters from the nervehead to the nasal side where the chorioidal pigment may be seen heaping itself around the border of the chorioidal scar. The central portion is white and the retinal vessels pass over it without interruption, showing that the disease has been limited to the chorioid. The tubercular area measures eight by sixteen millimeters in size.

The treatment was started at 1/100,000 milli-

gram, and he is taking at the present time one milligram at a dose, and the tuberculin will be increased until we get a local reaction at the point of injection.

*Case 7.*—Miss A. R., aet. 18, clerk, family history negative, general health always good. Has worn glasses for eight years on account of myopia and astigmatism. About four weeks before I saw her the right eye became red and inflamed and she saw floating particles in front of the eye, and noticed that her sight was gradually failing.

Vision: Right eye with  $-3$  spc.  $-1$  cyl. ax. 135 degrees, 20/70.

Vision: Left eye with  $-3$  spc.  $-1.50$  cyl. ax. 180 degrees, 20/20.

There was some slight pericorneal injection and a slight degree of photophobia but no really active ocular irritation.

There is quite a well marked deep punctate keratitis and a considerable amount of vitreous exudate. The disc edges are blurred and indistinct, but the vessels do not show any change. About two disc diameters from the nervehead to the nasal side of the fundus is seen a bluish white area slightly pigmented with a number of smaller highly refractive bodies about the margin of the foci of inflammation.

A Wassermann test was negative. Von Pirquet was made and the reaction was so slight that it was first considered doubtful, but the scarified areas of the von Pirquet tests remained persistent for days and I decided to use tuberculin in a case that most observers would have regarded as negative.

The treatment was persisted in with the local use of atropin. Patient was allowed to resume her desk work, and for about six weeks all intra-ocular conditions gradually increased in severity and the vision declined to 20/200 with correction.

The corneal opacities began to clear in a few days and were entirely absorbed within two weeks. The fundus shows a gradual absorption of the vitreous exudate, which had become so dense that any view of the retina, chorioid and optic nerve was impossible.

The tubercular foci is clearing and the central portion is becoming white from the absorption of the chorioidal pigment and the sclera is plainly seen, the edges are slightly elevated and the chorioidal pigment is being heaped up along the margins of the tubercle.

The retina and the retinal vessels pass over the surface of the area apparently unaffected. The disc is plainly seen again and shows no changes following the tubercular chorioiditis.

These two cases of conglomerate tubercles of the chorioid were very much alike in their onset, and the external and ophthalmoscope picture they presented. The location of the lesion was the same in both of the cases here reported. The chorioidal tubercles, as a rule, give slight or no

external signs of inflammation except for the deep punctate keratitis, which rapidly disappears with the use of tuberculin. There is usually a severe reaction of the vitreous and the conglomerate tubercle of the chorioid is accompanied with many smaller ones which gradually melt into the slow growing tumor. There was present optic neuritis in both cases, and this is usually observed.

The treatment in the first two years of my work was limited to the injection of tuberculin without any drugs being used locally, except for a boric acid wash. The diagnosis was made in the great majority of my cases, by means of the von Pirquet test. If we secured a positive reaction, we assumed that our patient was hypersensitive to tuberculin and we believed that the ocular lesions would get well with the tuberculin treatment. In the first two years of our work we only failed to clear up and cure the lesion in one case. This was a case of miliary tubercles of the iris which did not come under observation until there was complete occlusion and seclusion of the pupil, from what must have originally been a serofibrinous exudate which, when we first saw the case, was thoroughly organized and the vision was reduced to light perception. After two months of tuberculin without any other treatment, the eye was quiet and white.

During the past year after using tuberculin diagnostically, if it was followed by a positive reaction, it was then used therapeutically, together with atropin, hot applications, the diet was attended to and the patient was admitted to the hospital whenever possible.

We have two cases in this year's group that are still under treatment, in which cures cannot be claimed. The case of miliary tubercle of the iris is greatly improved, the other one, a case of deep tubercular keratitis in which the right eye has a complete leucoma of the cornea with shrinkage of the globe, and the left eye has just recently had fresh infiltrates in the central portion of the stroma layer of the cornea.

One might well ask the question: "Will tuberculin treatment do more than our previous forms of treatment for ocular tuberculosis?"

Tuberculin treatment used by itself will do as much and more than any of our former methods of treatment, especially in the cases of miliary or conglomerate tubercles of the iris and ciliary body and tubercular lesions of the retina, and the miliary or conglomerate tubercles of the chorioid.

Tuberculin injections supplemented with our former methods of treatment in all suspected and proven cases of ocular tuberculosis is undoubtedly the best means that we have for treating this class of ocular disease.

In conclusion let me add:

I. A positive reaction may not be as dependable in suspected ocular lesions of tuberculosis as a positive Wassermann reaction is in suspected

ocular lesions of syphilis, but it is at least a strong indication for tuberculin therapy.

II. Tuberculin as a therapeutic measure has an absolutely proven place in the domain of ophthalmology from the results of such men as von Hippel, Hertel, Vaughn and Davies, Tivenen, Thomson, Weeks, Marple, Derby and my own observations.

III. I believe a great many failures to get results from tuberculin therapy has been due to faulty technique; not continuing the treatment long enough; imperfect and inert tuberculin vaccines; or the use of the wrong tuberculin vaccines.

IV. I further believe that it will be proven as our investigations proceed, that it may be necessary to change our tuberculins when we do not get good results from one kind and use some other form of tuberculin vaccines.

V. The ophthalmologist who is not using tuberculin as a diagnostic agent and as a therapeutic measure is not practicing modern ophthalmology.

### Correspondence

March 23, 1915.

DR. JOHN COWELL MACEVITT,

Editor, NEW YORK STATE JOURNAL OF MEDICINE.

In the March issue of the JOURNAL, my article appeared on the "Use of the Bronchoscope in Direct Examination of Trachea Larynx, Bronchi and Oesophagus." Dr. Forbes called my attention to cases Nos. 5 and 6, and asks me to have them corrected, as they are "misleading." As printed, it may be taken that the writer operated on case 5, when he only assisted Dr. Forbes in doing the operation. In case 6, the history was given the writer from the hospital records. He was not present at the operation.

Will you kindly make corrections and give Dr. Forbes all credit due him.

Case 5.—Gold crown in right main bronchus.

Geo. B., aged 72, was brought to the Post-Graduate Hospital, October 27, 1913, by Dr. Quimby, and referred to Dr. Forbes with the following history: While having gold crown placed on tooth, patient suddenly gaped, and the crown disappeared. This was followed by coughing. A fluoroscopic examination showed crown in right main bronchus, open end upward. The writer was asked by Dr. Forbes to assist him in its removal. The larynx was anesthetized with 20 per cent cocaine solution. On passing the tube of Bronchoscope, crown was seen to move up and down on exhalation and inhalation. Dr. Forbes seized the crown with forceps passed through tube, drawing it against end of tube, removing both together. Patient remained in hospital over night. He returned on the 29th for examination. Old bronchial rhales present, but no œdema or irritation, no complications.

Case 6.—Open safety pin in right bronchus.

Martha C., 13 years old. December 1, 1913.

Case referred to Dr. Peterson by family physician, with history of having swallowed pin two days previous. On admission to the Post-Graduate Hospital, examination with laryngeal mirror and finger, failed to find anything—there was no change in the voice. An œsophageal tube was passed but failed to find anything, a No. 9 tube was then passed into bronchi, the pin found in right bronchus and successfully removed by Dr. Forbes.

Yours very truly,

PERRY SCHOONMAKER.

New York, July 15, 1915.

DR. JOHN COWELL MACEVITT,

Editor, NEW YORK STATE JOURNAL OF MEDICINE.

In the article "Operation for Cancer of the Breast," in the July issue of your esteemed Journal, reference is made to simultaneous and independent work of Willy Meyer and William Halsted recorded and published by each in 1894, namely, radical operation for cancer of the breast, anatomical allation of the entire mamma and its adnexa, together with the pectoral muscle *en masse*.

Studying the literature for the preparation of my paper, "Larrey" (published in *Medical Fortnightly*, May 15, 1915), I found that this radical operation had been performed already by Larrey.

"The patient had been operated twice already by other surgeons, but very soon a recidivation had appeared. Larrey operated, removed almost the entire musculus pectoralis major and the axillary glands down to the deepest roots. Patient survived the operation two decades."

At this occasion I may be permitted to quote from the paper on Larrey how well this great surgeon made use of the stomach tube:

"In our text-books we read that Kussmaul was the first who, in the year 1869, introduced the stomach tube in therapy, while, in fact, it was Larrey, who had already employed it to nourish patients in cases of dysphagy. Murat, who had been shot in the neck by Mamelukes at Abukir in such a way that the upper part of the larynx was coughed up, was for weeks nourished by means of the stomach tube. Larrey cured him so well that he could return to France. With his voice regained, he was later on enabled to command the largest cavalry masses which ever had been united under one commander for the powerful attacks of Napoleon.

"Larrey had also employed the stomach tube to nourish tetanus patients."

Yours truly,

A. ROSE.

### Department of Health, City of New York

August 20, 1915.

DR. JOHN COWELL MACEVITT,

Editor, NEW YORK STATE JOURNAL OF MEDICINE.

I am interested in your comments upon the work of the City Department of Health in its relation to medical economics in your editorial in the NEW YORK STATE JOURNAL OF MEDICINE of August.

According to the State Law regarding child labor, employment certificates cannot be issued to children in New York City between 14 and 16 except by the New York City Department of Health and after examination made by physicians of this Department.

You are doubtless correct in believing that examinations of equivalent value might be made by physicians in their private offices and that the parents of the children who apply for the certificates might be able to pay the small fee which would be charged by physicians for this service.

The Department has no choice but to make these examinations and issue the certificates under the terms of the State Law. The implication in your editorial is that this is an activity assumed by the Department and which the Department might forego in the interests of the medical profession of the city. I assure you that this is a burden which the Department must assume under the State Law and this service could not be rendered by a private physician even if the parents of children applying for certificates were willing to pay for the examinations.

I should be glad to know that you are sufficiently interested in the impression made upon your readers to put this before them in some way which would correct the impression which is quite common that the Department of Health is indifferent to the interests of the physicians of the city in its various activities.

Yours very truly,

HAVEN EMERSON,  
Deputy Commissioner.



## Medical Society of the State of New York

### COMMITTEE ON PRIZE ESSAYS.

The Committee on Prize Essays would remind those who have in mind the preparation of essays for the Merritt H. Cash Prize, that the subjects suggested, not arbitrary, for competition will be found in the September, 1914, number of the NEW YORK STATE JOURNAL OF MEDICINE.

These essays must be in the hands of the Committee not later than one month in advance of the annual meeting of 1916.

The subjects for the Lucien Howe Prize Fund of \$100, while not arbitrary, are as follows:

1. Description of diseases of the eye (especially optic nerve lesions), found in syphilis of the nervous system, stating the forms occurring in cerebro-spinal syphilis and parasyphilis.

2. How far should the state go in providing examinations and treatment of eye diseases seen in children in public, parochial and private schools?

3. Experimental or clinical study of the extent to which the vitreous may be manipulated or transplanted.

4. Study of the colloid factors with special reference to glaucoma.

The essays for this prize must be in the hands of the Chairman of the Committee, Dr. Albert VanderVeer, 28 Eagle Street, Albany, N. Y., not later than March 1, 1916.

JOHN F. W. W. WHITBECK, M.D.,  
Rochester, N. Y.  
EDWARD D. FISHER, M.D., New York.  
ALBERT VANDERVEER, M.D., Chairman,  
Albany, N. Y.

### District Branches

#### ANNUAL MEETINGS FOR 1915.

FIRST DISTRICT BRANCH.—Saturday, October 9th, at Nyack.

SECOND DISTRICT BRANCH.—Monday, November 22d, at Brooklyn.

THIRD DISTRICT BRANCH.—Tuesday, September 28th, at Hudson.

FOURTH DISTRICT BRANCH.—Tuesday, October 12th, at Saranac Lake.

FIFTH DISTRICT BRANCH.—Wednesday, October 6th, at Little Falls.

SIXTH DISTRICT BRANCH.—Tuesday, October 5th, at Elmira.

SEVENTH DISTRICT BRANCH.—Thursday, September 23d, at Geneva.

EIGHTH DISTRICT BRANCH.—Tuesday and Wednesday, September 21, 22, at Olean.

#### FIRST DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

##### ANNUAL MEETING, NYACK, N. Y.

Saturday, October 9, 1915.

President's Address—"The Utilization of the Knowledge We Possess," James E. Sadlier, M.D., Poughkeepsie.

Title to be Announced, Samuel E. Getty, M.D., Yonkers.

Address by the President of the Medical Society of the State of New York, W. Stanton Gleason, M.D., Newburgh.

"Melanolic Sarcoma," J. P. Hoguet, M.D., New York.

Discussion opened by Parker Syms, M.D., New York.

"The Importance of the Early Recognition of Arterio-Sclerosis," Louis F. Bishop, M.D., New York.

Discussion opened by Henry L. Winter, M.D., Cornwall.

"Relatively Low Blood Pressure," Johannes H. M. A. von Tiling, M.D., Poughkeepsie.

Discussion opened by Louis F. Bishop, M.D., New York.

"Hæmaturia: Its Clinical Significance," Edward C. Thompson, M.D., Newburgh.

"Practical Deductions to be Derived from Examination of the Blood," Howard P. Carpenter, M.D., Poughkeepsie.

Discussion opened by Archibald W. Thomson, M.D., Poughkeepsie.

"Traumatic Hysteria: Trauma Cause or Occasion." Daniel B. Hardenbergh, M.D., Middletown.

Discussion opened by Theodore Denton, M.D., Middletown.

"Report Upon a Case of Surgery of the Liver," George A. Leitner, M.D., Piermont.

Discussion to be opened by Charles E. Townsend, M.D., Newburgh.

#### THIRD DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

##### ANNUAL MEETING, HUDSON, N. Y.

Tuesday, September 28, 1915.

11 A. M.

Meeting of the House of Delegates at Elk's Club.

12.30 P. M.

Clam Bake at the Elk's Club.

The Medical Society of the County of Columbia cordially invites the members of the Third District Branch to be its guests and to join with them.

2 P. M.

##### SCIENTIFIC SESSION.

President's Address—Alvah H. Traver, M.D., Albany.

Address, W. Stanton Gleason, M.D., President, Medical Society of the State of New York, Newburgh.

"Cocaine and Morphine Law," Linsly R. Williams, M.D., Deputy Commissioner of Health, Albany.

"Carcinoma," Richard Derby, M.D., Chief, Surgical Clinic, St. Luke's Hospital, New York.

"The Intoxications," Christopher J. Patterson, M.D., Troy.

"Papilloma of the Trachea from the General Practitioner's Standpoint," Frank Keator, M.D., Kingston.

"Neurasthenia," Louis Van Hoesen, M.D., Hudson.

#### FOURTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

##### ANNUAL MEETING, SARANAC LAKE, N. Y.

Tuesday, October 12, 1915.

"Appendicitis as a Complication of Pulmonary Tuberculosis," Hugh M. Kinghorn, M.D., Saranac Lake.

Discussion by C. C. Trembly, M.D., and R. M. Brown, M.D., Saranac Lake.

"Report of Cases of Appendicitis," Lew H. Finch, M.D., Vice-President, Fourth District Branch, Amsterdam.

"Some Phase of the Cancer Problem," Howard C. Taylor, M.D., New York.

"The Significance of Pyloric Spasm," Irving S. Haynes, M.D., New York.

"Renal Calculi," Robert S. Macdonald, M.D., Plattsburg.

"Reduction of Obesity," Albert W. Ferris, M.D., Saratoga Springs.

"End Results in Cases Reported for Salpingitis," Edwin MacD. Stanton, M.D., Schenectady.

"Milk and Communicable Diseases," Linsly R. Williams, M.D., Deputy Commissioner of Health, Representing State Health Department, Albany.

"Artificial Pneumothorax," with Demonstration of Cases, J. Woods Price, M.D., Saranac Lake.

Discussion by Sidney F. Blanchet, M.D., Saranac Lake.

#### CLINIC.

"The Bronchiectatic State," "The Chronic Non-Tuberculous Lung Infection," "History, Symptoms, Diagnosis and Treatment," "Differential Diagnosis from Pulmonary Tuberculosis," Albert H. Garvin, M.D., New York State Hospital for Incipient Tuberculosis, Ray Brook.

Short topics closely related to Dr. Garvin's presentation will be given by Edward R. Baldwin, M.D., Saranac Lake; Lawrason Brown, M.D., Saranac Lake, and Allen K. Krause, M.D., Saranac Lake.

The President and Secretary of the State Society are expected to be present and address the meeting.

Opportunity will be afforded for visits to local institutions to those who care to do so.

Luncheon will be served at the Berkely Grill, the Fourth District Branch being guests of the Saranac Lake Society.

Following the afternoon session visit to the Ray Brook Sanitarium will be made, where Dr. Garvin's demonstration will be held.

The Medical Society of Saranac Lake are sparing no pains to make this one of the most delightful and profitable meetings, and it is to be hoped that a very large attendance will be had in response to the fine courtesy extended.

#### FIFTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

ANNUAL MEETING, LITTLE FALLS, N. Y.

Wednesday, October 6, 1915.

MORNING SESSION, 10 A. M.

President's Address, William D. Garlock, M.D., Little Falls.

"Cancer," LeRoy Broun, M.D., New York.

"Cancer," Harvey R. Gaylord, M.D., Buffalo.

Discussion of cancer, led by Willis E. Ford, M.D., Utica.

"The Fundamental Causes and Principles of Treatment in Acute Membrane Inflammations, with Special Reference to Inflammations of Ear, Nose and Throat," Sargent F. Snow, M.D., Syracuse.

"Supracondylar Fracture of Elbow," with lantern slides, William L. Wallace, M.D., Syracuse.

Adjournment for luncheon.

#### AFTERNOON SESSION.

Business meeting.

"Anæsthesia," with special apparatus, Richard D. Kibbey, M.D., Utica.

Discussion on anæsthetics opened by Gilbert D. Gregor, M.D., Watertown.

#### SYMPOSIUM ON GENERAL INFECTIONS:

"The Nature of General Infections," Wardner D. Ayer, M.D., Syracuse.

"The Prognosis in General Infections," Henry L. Elsner, M.D., Syracuse.

"The Treatment of General Infections," Andrew MacFarlane, M.D., Albany.

"The Treatment of Diphtheria," Charles F. Burrows, M.D., Syracuse.

Discussion of General Infections.

"Causes and Results of Abnormal Blood Pressure," William D. Alsever, M.D., Syracuse.

"Treatment of Abnormal Blood Pressure," William M. Gibson, M.D., Utica.

Discussion of blood pressure opened by Arthur A. Gillette, M.D., Rome.

#### SEVENTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

ANNUAL MEETING, GENEVA, N. Y.

Thursday, September 23, 1915.

10 A. M.

Opening Remarks, William T. Shanahan, M.D., President, Seventh District Branch, Sonyea.

Address by President of the Medical Society of the State of New York, W. Stanton Gleason, M.D., Newburgh.

"A Plea for the Feeble-minded," Ethan A. Nevin, M.D., Newark.

"Eclampsia and Its Treatment," William M. Brown, M.D., Rochester.

"Surgical Asepsis," Frederick H. Flaherty, M.D., Syracuse.

"Gall Bladder Disease," Homer J. Knickerbocker, M.D., Geneva.

"The Advantages of Ether Anesthesia and the Sitting Posture in Tonsillectomy," Alfred W. Armstrong, M.D., Canandaigua.

Luncheon.

2 P. M.

Business session.

"Pellagra," with presentation of case, G. Kirby Collier, M.D., Sonyea.

"Intestinal Stasis," Eliza M. Mosher, M.D., Brooklyn.

"Present Status of the Cancer Problem," Harvey R. Gaylord, M.D., Buffalo.

"The Surgery of Advanced Cancer," William I. Dean, M.D., Rochester.

"Mouth Infection," illustrated with lantern slides, Arthur W. Smith, D.D.S., Rochester.

"The Relation of Mouth Infection to Systemic Diseases," John R. Williams, M.D., Rochester.

"The Health Department and the General Practitioner of Medicine," Isaac W. Brewer, M.D., Geneva.

"Vesicle Calculus," Edwin C. Foster, M.D., Penn Yan.

Geneva is centrally located in the district and has good roads leading to it from all points.

#### EIGHTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

ANNUAL MEETING, OLEAN, N. Y.

September 21 and 22, 1915.

Tuesday, September 21, 1915.

AFTERNOON SESSION, 2 P. M.

"Syphilis of the Stomach, with a Report of an Unusual Case," Raymond B. Morris, M.D., Olean.

"Backache, An Anatomical Explanation, with Diagnosis and Treatment," Roland Meisenbach, M.D., Buffalo.

"Two Cases of Intestinal Occlusion Following Parturition," Jane L. Greeley, M.D., Jamestown.

"Accidents and Injuries of the Eyes: Their Prevention and Treatment," F. Park Lewis, M.D., F.A.C.S., Buffalo.

"The Dietetic and Medical Treatment of Cancer," L. Duncan Bulkley, M.D., New York City.

"Presentation of an Orthopedic Exhibit of Bone and Joint Conditions commonly seen by the General Practitioner," Roland Meisenbach, M.D., Buffalo.

Supper at 8 o'clock P. M. at the Olean House.

The Medical Society of the County of Cattaraugus will give a supper to all members of the medical profession present at the meeting.

Wednesday, September 22, 1915.

MORNING SESSION, 10 A. M.

Business meeting.

President's Address, Carl G. Leo-Wolf, M.D., Buffalo.

"Cancer" (under auspices of the American Society for the Control of Cancer), Joseph C. Bloodgood, M.D., Associate Professor of Surgery at Johns Hopkins University, Baltimore, Md.

Discussion opened by B. T. Simpson, M.D., of the New York State Institute for Cancer Research, Buffalo.

"Work of the State Institute for Cancer," Harvey R. Gaylord, M.D., Buffalo.

"Report of a Case of Primary Melanotic Sarcoma of the Lungs, Presenting Difficulties in Differentiating from Tuberculosis," Oscar F. Kunkel, M.D., Bells Camp, Pa., and Edward Torrey, M.D., Olean, N. Y.

Dinner, 12.30 P. M.

AFTERNOON SESSION, 2 P. M.

"Neglected Surgery," W. Ross Thomson, M.D., Warsaw.

"End Results," William D. Johnson, M.D., Batavia.

"Experiences in a French Military Hospital," Ray M. Eaton, M.D., Wellsville.

"Presentation of a Case," J. Henry Dowd, M.D., Buffalo.

"Indefinite Pain: Its Cause as Viewed by the Dowd Phosphatometer," Bion E. Smith, M.D., Angola.

## County Societies

SCHUYLER COUNTY MEDICAL SOCIETY.

REGULAR MEETING, WILLARD, N. Y., JULY 30, 1915.

The regular July meeting was held at the invitation of R. M. Elliott, M.D., Superintendent of the Willard State Hospital. It was the occasion for a visit to the Hospital.

The Society met on board of the Hospital launch "Nautilus," which left the Watkins dock at 10 A. M., having on board the following members of the Schuyler County Society: M. L. Bennett, M.D., of Watkins, President; J. M. Quirk, M.D., of Montour Falls, Vice-President; P. H. Lyon, M.D., of Watkins, Secretary; F. B. Bond, M.D., of Watkins, Treasurer; A. Jackson, M.D., of Odessa; W. H. Beach, M.D., of Catherine; G. O. Smith, M.D., of Odessa; G. A. Mottram, M.D., of Dundee; S. B. Clark, M.D., of Beaver Dams; G. H. King, M.D., of Watkins; D. W. Scutt, M.D., of Watkins; and the following guests: C. H. Abbott, M.D., of Elmira; J. C. Fisher, M.D., of Elmira; C. H. Haase, M.D., of Elmira, all of the Chemung County Medical Society, and N. Philip Norman, M.D., of Watkins.

The business meeting was held while enjoying the sail down the lake, Dr. Bennett, the President, in the chair.

The minutes of the last meeting were read and approved.

The committee to revise the fee bill reported and presented a new fee bill, suitable to present conditions. After thorough discussion this was adopted, and the Secretary was ordered to have copies printed and distributed to the members. It was moved, seconded and adopted that any future changes which might be required should be referred to the committee with power to act.

The censors reported that they had examined the applications for membership of N. Philip Norman, M.D., and Clarence W. Lieb, M.D., of Watkins, and having investigated their credentials, recommended their acceptance by the Society. On motion, duly seconded and carried, the doctors were declared members of the County and State Societies.

There then ensued a general discussion of medical matters, after which, there being no further business, the session was adjourned to the next regular meeting, the date of which to be set by the comita minoria.

By this time the launch arrived at Willard, where the visitors were met by Dr. Elliott and his staff, accompanied by Dr. William Browning, of Brooklyn, and after a short exchange of greetings, luncheon was served in the staff dining room. A most delicious and enjoyable meal having been thoroughly appreciated, automobiles were provided and the Society inspected the entire plant of the State Hospital, Dr. Elliott taking occasion to present clinically the more uncommon cases under care therein. The members were impressed not only with the splendid equipment and thorough organization of the institution, but many remarked and commented as well on the splendid results that were obtained and the constantly evident happiness and good will of the inmates.

Dr. Elliott and his staff took the greatest pains to have the members of the party made familiar with the most intimate workings of the institution, and their un-failing courtesy and hearty good will did much to make the day one of the most enjoyable, as well as eminently instructive, that the Society has ever known.

After the inspection had been completed, the visitors were shown to the residence of the Superintendent, where a short social call was made, and at 5 P. M. the party re-embarked on the "Nautilus" for the return trip, reaching Watkins about 7 P. M.

Before leaving the launch the following resolution was unanimously adopted, and the Secretary ordered to send a copy to Dr. Elliott:

"WHEREAS, The Schuyler County Medical Society has enjoyed at the hands of Dr. Elliott and the staff of the New York State Hospital, at Willard, an unprecedented opportunity to inspect the organization, equipment, operation and management of the institution, together with the observation of many interesting and instructive cases of mental disease, it is hereby

"Resolved, That the thanks of the Society are unanimously tendered to Dr. Elliott and his staff for their courtesy and kindness in providing this opportunity, and in facilitating our enjoyment thereof.

"We deem it but meet to express our appreciation, not only of the pleasure experienced, but desire as well to record our satisfaction in seeing at first hand the splendid way in which the unfortunate sufferers from this class of diseases are cared for, and their comfort and happiness conserved. As the representative medical body of this county, we count ourselves fortunate in that the district served by the Willard State Hospital includes in its confines the County of Schuyler."

Certain it is that no one who was present will for a long time forget the day so pleasantly and profitably spent with Dr. Elliott at Willard.

## 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.

A TEXT-BOOK OF PATHOLOGY. By ALFRED STENDEL, M.D., Prof. Medicine, University Pennsylvania, and HERBERT FOX, M.D., Director Pepper Laboratory of Clinical Medicine, University Pennsylvania. Sixth Edition, Reset. Octavo of 1,045 pages, with 468 text illustrations, many in colors, and 15 colored plates. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$6.00 net; Haf-morocco, \$7.50 net.

OPHTHALMOSCOPIC DIAGNOSIS FOR GENERAL PRACTITIONERS AND STUDENTS. By GEORGE W. JEAN, A.B., M.D., Instructor in Ophthalmology and External Diseases of the Eye in the School of Ophthalmology, New York Eye and Ear Infirmary, Assistant Surgeon New York Eye and Ear Infirmary, Instructor of Ophthalmology, University and Bellevue Hospital Medical College, and Ophthalmic Surgeon Williamsburg Hospital, etc. 68 illustrations. E. B. Meyrowitz, Inc., London, New York, Paris.

## Book Reviews

SOME AMERICAN MEDICAL BOTANISTS. Commemorated in our Botanical Nomenclature. By HOWARD KELLY, M.D., LL.D. Delivered as a lecture before the Medical Historical Society of Chicago, 1910, and before the University of Nebraska, October 16, 1913. The Southworth Company Publishers, Troy. 1914.

This biographical work traces charmingly the floral medical godfathers of America. It is a fair garden into which the author leads us, in which we meet the men whose search for remedies was keen in days when malaria and dysentery ravaged whole towns and paralyzed industry. The book is a key to how and why our botanical resources became what they are. One will feel better acquainted with lobelia and all the other drugs of like derivation after a reading of this work. To Kelly, too, "there is religion in a flower," and one of the sources of "piety." Kelly laments that times have changed and that other interests seem to thrill the boys of today. In botanizing he discovered a "pure, sweet and refining passion," which apparently absorbs him still. Nowadays science is Rockefellerized, and our young men are to be found, not in the closet, identifying specimens, and in the fields on botanical excursions, but in dance laboratories, studying the new steps. The search for galenicals is ended and medicine is Carnegieized, yet no memorials are left behind by men more enduring than *Darlingtonia*, *Gardenia*, *Claytonia*, *Torreya*, *Mitchella*, *Wistaria*, *Sarracenia* and *Poinsettia*, reminiscent forever of the great American demigods of the healing art.

A. C. J.

SEXUAL ETHICS. A Study of Borderland Questions.

By ROBERT MICHELS, Professor of Political Economy and Statistics, University of Basle, Honorary Professor Faculty of Law, University of Turin. The Walter Scott Publishing Co., Ltd., Paternoster Sq., London, E. C. Charles Scribner's Sons, 597 Fifth Ave., New York. 1914.

Michels discusses with peculiar insight the borderland, unsolved sexual-psychological problems of life. His observations are empirical, rather than strictly scientific, but there is no phase of the subject in hand with which he appears to be unacquainted and which he does not illuminate without recourse to unintelligible jargon. Thus he not only draws upon solid research, but upon the writings of innumerable poets and novelists. His book is far franker than any to which readers of English works are accustomed, and he makes no concessions to puritanical pruderies. It is strong meat that he offers, and the babes had best take care. All his views are ultra-modern and advanced with a vengeance and in our judgment eminently sound. A distinguished and fascinating style marks his writing, and it is further characterized by an irrefutable soundness and sanity of thought and pleading, before which the most Philistian of minds must give way and with which the liberal-minded will be captivated. Especially hard upon the Anglo-Saxon mind will bear his argument that the "pure woman is a fiction of the libertine, an idea that he shows never originated in the brain of a moral-thinking man (p 214 *et seq.*). "A woman who is devoid of a certain measure of animality, and that by no means a small measure, must be regarded as a degenerate." He makes an amusing comment on homosexuality, said to be so common in Germany. A malicious jester visiting Germany for the first time, having seen the collection of ladies appearing at the annual rectorial ball of a university town, remarked that now at last he was able to understand the notorious prevalence of homosexuality among German men. The book is a veritable mine of psychosexual data, masterfully dealt with.

A. C. J.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By ANTHONY BASSLER, M.D., Prof. Clinical Medicine, and Vis. Phys. N. Y. Polyclinic; Chief Gastro-Enterologist, German Poliklinik. Second Edition, revised and enlarged, illustrated with half-tone and line text engravings, 75 full-page and half-tone plates (with over 100 figures). Philadelphia: F. A. Davis Company, publishers, 1913. Price, \$6.00 net.

Previous reviews of Dr. Bassler's work on the stomach have dealt with its conciseness, comprehensiveness and directions. One may properly emphasize the wealth and excellence of the radiographic reproductions, many of which are unusually clear. The work as a whole contains a general survey of the subject that is comprehensive and is well arranged and forceful and is presented with sufficient brevity and directness to recommend it as an excellent work for all around purposes.

HENRY G. WEBSTER.

MANUAL OF SURGERY. By ALEXIS THOMPSON, Prof. Surg., Univ. Edinburgh, Surg. Edinburgh Royal Infirmary, and ALEXANDER MILES, Surg. Edinburgh Royal Infirmary. Vol. 3. Operative Surgery. Second edition, with 255 illustrations. Edinburgh, Glasgow and London. Henry Frowde and Hodder & Stoughton. Oxford University Press, 35 West 32d Street, New York. 1913. Price, \$3.50.

The present edition appears in much the same form as its predecessor, published in 1912.

Twenty-five additional illustrations enhance this volume. The Basle anatomical nomenclature has been adopted. The old terminology, however, is preserved in brackets for guidance of those as yet unfamiliar with the new terms.

The chapters on operations upon the stomach and intestine show revision. Ball's operation for the relief of pruritis ani is added. Other additions are noted which bring the work up to date.

The work is admirably written and reflects the best present-day teaching of operative surgery.

ROYALE H. FOWLER.

## Deaths

BENJAMIN E. DOLPHIN, M.D., New York City, died August 21, 1915.

JAMES GOLDLUST, M.D., New York City, died July 27, 1915.

JOSEPH J. HIGGINS, M.D., New York City, died August 22, 1915.

ARTHUR T. HILLS, M.D., New York City, died August 7, 1915.

CHARLES O. MAISCH, M.D., New York City, died August 20, 1915.

ABRAHAM MAYER, M.D., New York City, died August 20, 1915.

C. A. STERNBERG, M.D., Gloversville, died July 28, 1915.

NELSON W. WILSON, M.D., Buffalo, died August 30, 1915.

# NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

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No. 10

## EDITORIAL DEPARTMENT

### WHAT IS THE CHARACTER OF THE MEDICAL JOURNALS YOU READ?

AT the session of the House of Delegates held in San Francisco, the Board of Trustees presented a special report on the work of the Council on Pharmacy and Chemistry in which it condemned in unqualified terms the advertising in medical journals of proprietary nostrums.

We do not believe that the sincerity of the philanthropic desires of the American Medical Association in its efforts to destroy the manufacture and sale of nostrums, proprietary or otherwise, is questioned by any one except the financially interested purveyors of these fraudulent remedial concoctions. We do not believe that any one, not excepting the foregoing mentioned purveyors, questions the honesty of the reports of the Council on Pharmacy and Chemistry. It must furthermore appear patent to every one that financial gain is the one and only aim of these conscienceless individuals who dupe the public, that there is no more philanthropy in their reptilious souls than there is sympathy for any living thing in the brain of the venomous adder. No one with a modicum of reason believes that the ordinary business man invests his capital in exploiting any form of merchandise for your, rather than his material benefit. His is a crusade for profit. The American Medical Association is

in need of money to carry on its beneficent projects, but is its crusade against nostrums tinged with the hue of expected profit or is it a truly altruistic crusade? The query requires no answer. It is self evident.

Referring to the subject of the man with purely business instincts: in placing an article upon the market he estimates the cost of production, its greatest obtainable profits, and the ways and means to create a demand for his ware. If its intrinsic value is approximately recognizable he must attune his profits to that general knowledge. The purchaser of his wares cannot be fooled or swindled to any great extent. If they be, their loss is a material one and can be recovered from. But when an exploiter places on the market a nostrum of no intrinsic value (excepting the bottle and cork) for which he claims virtues which it does not possess and which the wise and the unwise cannot dispute until victimized; when he envelops it in an air of mystery, appealing to superstition, ever present in the human mind, he robs the purchaser of his money and health, thereby becoming a thief of the most despicable order. Any Medical Journal printing the fraudulent claims contained in the advertisements of the nostrums condemned by the Council on Pharmacy and Chemistry is an accessory to this act of thievery and the subscriber to such journals voluntarily assumes the position of an accomplice.

## HORSE SERUM AS A HAEMOSTATIC

FOR nearly a decade although not yet in general use, fresh normal horse serum has been administered for the control of various phases of hemorrhage. Within the past two years there have been so many favorable reports regarding its efficacy that we feel justified in bringing the subject pertinently to the notice of our readers, at the same time suggesting that a wider application be given to its use in cases in which it has proved its potency, such as—in hemorrhage from intestinal perforation, in typhoid fever, from gastric ulcer, from hæmoptysis, from purpura hæmorrhagica, from uterine and puerperal hemorrhages and from hemorrhages following prostatectomies, turbinectomies and tonsillectomies. In the two latter cases it has been successfully used as a prophylactic. In hemorrhages in the new born and in hæmophilia the reports are exceedingly contradictory.

The consensus of opinion is that in these conditions it cannot be relied upon, but as the number of cases on which this opinion is based was not large it should not be influential in preventing a test of its efficiency in order to add to our as yet indefinite knowledge. In this regard Dr. Welch, pathologist to the New York Lying-in Home, employed injections of normal human serum in the treatment of nine babies suffering from hæmophilia neonatorum without the loss of a single patient. He believes that all of these cases would have died under any other form of treatment as in injection cases of hæmophilia neonatorum which had occurred in the previous history of the institution seventeen ended fatally. Reports made to the Department of Health of New York by physicians using horse serum were in no wise so favorable. This could not have been caused by using horse serum instead of human serum, as it is admitted that the nature of the sera used makes but little difference.

In all forms of hemorrhage success has attended the use of horse serum more often than failure. A good practice to follow would be to employ it in all dangerously persistent hemorrhages and if unsuccessful in achieving the desired results to resort to transfusion of human blood at least in markedly acute cases.

In some instances the bleeding slowly diminishes after one or more injections of the serum leaving in doubt its actual agency. In others of the same type of cases the bleeding ceases abruptly without any other apparent cause than the action of the serum.

The dose should be from 10 to 20 c.c. given subcutaneously and repeated if necessary at intervals of from twelve to twenty-four hours. If no good results follow after the third injection it would seem advisable to discontinue the treatment. It is well to bear in mind that in the administration of horse serum, the patient is liable to suffer from the symptoms attending the injection of all serums—increase of temperature, malaise, joint and muscular soreness and most important of all, anaphylaxis. As far as we know no fatal results have followed its use.

In two cases of gastric ulcer coming under our personal observation and in which both patients were in extremis the initial dose given was 50 c.c. In one of the cases subsequent smaller doses were given before the hemorrhage was completely checked. In the second case the patient had been passing blood from the bowels for two weeks and presented all the symptoms of exsanguination, the Cheyne-Stokes respiration at times being present. Fifty c.c. were injected intra-muscularly, after which the hemorrhage did not reoccur.

Fifty c.c. are 30 c.c. in excess of the usual initial dose, but only good results followed in both of the foregoing cases. We do not advise such heroic doses, but each case must be a problem in itself to the medical attendant.

Serum is furnished to physicians without charge by the Department of Health; provided a report be sent to the Department detailing each case in which it has been used.\*

As *fresh serum* is not easily obtainable on short notice except in municipalities where there are departmental laboratories a proprietary preparation called Coagulose may be used instead.

While the use of horse serum has passed the experimental stage, experience with it when more generally adopted will determine its true value as a hæmostatic.

\* The editor of the JOURNAL is under obligation to Dr. M. Nicoll, Assistant Director of the Bureau of Laboratories of the Department of Health of New York City, for important data contained in these comments, based on reports of cases.

## THE DELEGATE AND HIS CARBUNCLE

IN the reign of Woodrow the wise, a Delegate to the meeting of the American Medical Association journeyed from San Francisco to Seattle, where he took passage on the steamer *Mariposa*, sailing for Knick, the nearest settlement to the Government's Alaskan coal fields. About the seventh day out of port the Delegate experienced an irritating sensation between his shoulders, which by degrees became painful and then intensely so. As the Alaskan steamer neither employed a ship's surgeon nor carried surgical supplies, there was a dearth of medical aid. Rigors and fever warned the Delegate that he was suffering from some infection. At Cordova, three days out from Knick on the return voyage, there came on board Dr. E. A. Davis of New York City. The doctor was bubbling over with enthusiastic praises of the beauties of Alaskan scenery. He was asked to hold his opinion in abeyance until he had had a view of the scenic developments on the Delegate's back.

"Ye gods!" he exclaimed, "there is nothing in Alaska like it."

"Like what?" the Delegate asked.

"Your carbuncle and its purple halo."

"Cut deep," said the Delegate.

Two incisions, four inches in length, down to and through the muscular fascia of the trapezius were the result of this request. On the following day the steamer arrived at Skagway, where the good Samaritan took his departure. For the next four days the Delegate was confined to his stateroom. His wound was dressed twice daily by the ship's steward. "I am glad to be of help to you, doctor," he said sympathetically, "for my father always considered doctors to be his best friends"—his father was an undertaker. The carbuncle's devoted attachment to the Delegate caused a rise in the latter's temperature to 103½ degrees. The captain of the ship sent out a wireless message to Ketchikan to have a surgeon come aboard on the ship's arrival. In Ketchikan there are three brothers, Drs. J. L., B. L., and W. A. Myers, each doing special work in a small but well equipped hospital. Two of them, upon the arrival of the steamer, visited the Delegate in his room. A glance was sufficient.

"It will be necessary for you to enter the hospital." The Delegate assented. There, under nitrous oxide gas, the incisions were enlarged

and their depths curetted. Again the Delegate was back in his bunk. At midnight after leaving Ketchikan the steamer cavorted like a broncho over an uncharted rock. The Delegate wondered what was coming next. It was one of the ship's officers who told him not to worry. Two friendly passengers next appeared wearing life preservers. They likewise told the Delegate not to worry. He did not. An inward joy filled his soul in the knowledge that five minutes' submersion would cure his carbuncle. When it was found that the ship was leaking badly she returned to Ketchikan for repairs—likewise the carbuncle and its owner. Four days afterwards he was carried from the ship to the Seattle General Hospital, where Dr. Eagleson, under ether anæsthesia, ornamented the Delegate's back with two crucial incisions over the infected area.

On the steamship the Delegate formed the acquaintance of Mr. Park, Vice-President of the Illinois Central Railroad, who, upon the Delegate's expressing the trouble he expected to experience on his way from Seattle to New York, wrote to the officers of the Canadian Pacific Railroad to extend to the Delegate every courtesy possible. The extension of that courtesy is the cause of this brief narrative. On board the trains from Seattle to Toronto the passenger and Pullman conductors, stewards and porters vied with each other in rendering the Delegate comfortable, and at a certain station each morning a Canadian Pacific surgeon, properly equipped to dress the Delegate's back, boarded the train. At Toronto one of the Division Superintendents, accompanied by a surgeon, met the Delegate, and here he received his final Canadian attention. The latter recognizes that this specially marked courtesy on the part of the Canadian Pacific Railroad officials was due not only to the request of Mr. Park but to their well-known desire to cater to the pleasure of all their patrons, which in no wise lessens the Delegate's gratitude.

We trust the readers of the *JOURNAL* will forgive the usurping of this space, but we feel that notice should be called to the sympathetic and skillful attention extended to the invalid, not for any personal attainments on his part, but owing to his representative character as a member of the Medical Society of the State of New York, by the following surgeons: Drs. Myers, Eagleson, Brissing, McKyd, Moody, Stewart, Baker, Shean and Beeby.

## THE SPINAL FLUID IN SYPHILIS.\*

By SYDNEY R. MILLER, M.D.,

BALTIMORE, MD.

THE classical studies of Magendie, Luschka, Key and Retzius and others had established many important facts concerning the cerebro-spinal fluid prior to 1891. Quincke's<sup>1</sup> publications in this year upon the technic and value of lumbar puncture really mark the first stage, however, in the clinical application of this valuable method. During the next ten years spinal fluids were examined chiefly in cases of meningitis and hydrocephalus, and the studies were essentially along bacteriological and morphological lines. In 1901 Widal,<sup>2</sup> Sicard and Ravaut made their initial contribution to the study of the cerebro-spinal fluid in nervous and mental diseases.

As far back as 1610, Guarnoni described the clinical evidence which pointed toward meningeal irritation in the secondary or acute stage of syphilis. Abundant clinical observations in favor of this view had accumulated prior to 1903, when Ravaut<sup>3</sup> reported his results of the systematic examination of the spinal fluid in secondary syphilis. He found abnormal changes in about 70 per cent of his cases, particularly in those presenting cutaneous lesions other than of the roseolar type. Since then the similar reports of Nonne,<sup>4</sup> Gennerich,<sup>5</sup> Altmann and Dreyfus,<sup>6</sup> and others have demonstrated the truth of the belief of early meningeal invasion, and of Fournier's conception that a chronic meningitis is the connecting link between the original acute luetic infection and the later manifestations in the central nervous system. Ravaut's work initiated intense interest in the examination of the cerebro-spinal fluid: the subsequent demonstration of a total-protein increase by Guillain and Nissl,<sup>7</sup> and of a globulin increase by Nonne and Apelt,<sup>8</sup> established points of similarity between the true luetic and the so-called "meta-luetic" diseases of the brain and spinal cord. Histological studies of the cellular elements occurring in the spinal fluid further narrowed the difference between these two groups of diseases; this was finally practically eliminated by Plaut's<sup>9</sup> demonstration of 1906, of a positive Wassermann reaction in the fluid in a very high percentage of those cases hitherto looked upon as of luetic origin, but not of luetic type.

The fulfillment of Erb's<sup>10</sup> prophetic wish, uttered in 1902: "Wenn nur endlich das syphilitische Virus zu fassen wäre!" was realized in 1913, when Noguchi<sup>11</sup> and Moore demonstrated the *Treponema pallidum* in the brains of twelve paretics. This discovery, since confirmed by numerous others, the finding by Noguchi of the same organism in tabes dorsalis, his successful inoculation of dogs with emulsions made from

paretic brains, and Grave's<sup>12</sup> successful transmission of the disease, using whole blood from a case of incipient paresis, mark the final stage of the conflict which has been waged over the nature of syphilitic diseases of the central nervous system. Many facts yet remain unanswered, problems for future investigation; from a purely theoretical point of view it must be admitted that not all of the laws of Koch have been fulfilled, and that we are not yet entirely free from the assumption that in paresis and tabes the lesions are of a toxic origin, according to the general view of Moebius (1884), Kraepelin and others. Yet practically such a statement is an unwarranted begging of the question. No longer is there sufficient ground for clinging to the terms "para" or "meta"—syphilitic diseases of the nervous system in the sense of Fournier. Paresis and tabes are not primarily degenerative conditions, but are active inflammatory processes, caused by the direct activity of the *Treponema pallidum*. Moreover, it has recently been pointed out, particularly by McIntosh and Fields,<sup>13</sup> that the lesions of these diseases are essentially the same as those of lues elsewhere in the body. Syphilis, as observed clinically, and as studied experimentally, particularly by Uhlenhuth and Multzer,<sup>14</sup> must be regarded as a general infection, which involves the entire body at all times: a chronic sepsis with generalization of the virus before the appearance of the primary sore, which represents not a stage in the disease, but merely an incident in the incubation period, which ends in the more acute secondary manifestations, the lesions of which differ practically only in their number and severity. There follows a period of latent chronicity, with periodic exacerbations due to the activity of the few organisms which survived the offensive attacks of the body during the acute stage. As Virchow showed, long ago, the appearances of the *lesions* in any stage are but the expressions of the results secondary to the action of the virus, diffuse or focal, upon either the interstitial or parenchymatous tissues of the viscera invaded. In the former, proliferative and combative functions are shown by their marked overgrowths and infiltrations, while in parenchymatous tissues metabolic functions surpass the reactive—a difference which predisposes to subsequent degeneration, often irreparable. In syphilis of the brain and spinal cord, essentially one organ, these same statements apply with equal force: the clinical signs and symptoms are but the outward expression of the activity of the spirochæte upon the meninges, the blood vessels, the neuroglia and parenchyma of the nervous system. Moebius, Nageotte, Nissl and Alzheimer are doubtless correct in the view that tabes is simply another localization of paresis, and that the latter is cerebral tabes. The bedside picture is merely a portrayal of the localization of the tissue reaction.

It is apparent that the careful study of the

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 28, 1915.



spinal fluid had yielded much of our knowledge concerning the nature of paresis and tabes before Noguchi's decisive discovery. Today, while scientific workers are still endeavoring to decide the precise mode of origin, circulation and absorption of the cerebro-spinal fluid, its functions and perversions, clinicians are making daily use of it in the diagnosis, prognosis and treatment of syphilis of the central nervous system. Like all laboratory methods, the examination of the cerebro-spinal fluid has its limitations and sources of error, just as do our other diagnostic tests for syphilis, such as the demonstration of the spirochetes, the blood Wassermann reaction or the allergic luetin reaction of Noguchi. *Due emphasis, therefore, is here laid upon a fact which deserves much wider application, namely that the value and interpretation of any laboratory method should always be based upon the most careful clinical study of the cases in which it is applied.* There is great need for a much closer partnership between clinicians and laboratory workers. The results of one are complementary to those of the other. The clinician who does not use modern laboratory methods is to be condemned with the laboratory specialist, who, all too often led away by commercial instincts, dogmatically asserts the diagnostic specificity of this or that reaction.

In view of our present information regarding its profound importance, it is remarkable to find how many physicians there are who never make use of lumbar puncture. This is the result either of ignorance of the technic, an unwarranted fear of the dangers associated with it, or a condemnable "what's the use?" attitude toward the group of diseases in which lumbar puncture is of most value. Why subject the patients to the annoyance when the conditions are incurable? None of these excuses will stand careful analysis. It is not necessary to describe the method here, but I cannot refrain from urging its wider acceptance in the interest of furthering our knowledge of the diseases under consideration. My own feeling is that every individual known to have had lues should be punctured periodically, if possible, over a period of years, and particularly those whose secondary manifestations have been insignificant in character or absent entirely. Such a procedure may well be regarded as "protective therapy," and at the same time it is sure to aid in the solution of some very important problems. Three suggestions only will be made with reference to the performance of lumbar puncture:

1. That when possible it be performed with the patient in the sitting position, either on the edge of the bed, or on a stool placed nearby. The statement that lumbar puncture is dangerous unless made while the patient is lying down, is without basis of fact and readily accounts for a large percentage of unsuccessful results, that is, failure to enter the subarachnoid space at all, or the securing of a bloody fluid.

2. That the amount of fluid withdrawn for diagnostic purposes should never exceed 10 cc. Kafka<sup>15</sup> has recently called attention to the fact that a very complete study can be carried out with 7.5 cc.

3. That, following the puncture, the patient, no matter what his condition, should immediately be put to bed and kept there for a minimum of 24 hours, even in the complete absence of such symptoms as headache, nausea or dizziness. Such a routine will reduce these unpleasant reactions to a minimum; when they do occur, they rarely require treatment other than absolute rest until no recurrence is noticed by the patient when sitting up.

There are certain requirements which must be met, in the actual examination of the spinal fluid withdrawn. The careful internist of today is no longer content to base his judgment of the type and degree of a kidney lesion upon the finding of albuminuria and casts; he calls to his aid all the modern laboratory methods which will throw any light upon the functional ability of the organs in questions. Determinations of blood urea, total and rest nitrogen, phthalein, lactose and salt excretion, all these must be given their correct relative values in a careful interpretation of the condition. Call them refinements, if you will, they none the less serve well the physician who endeavors to do most for his patients. Precisely the same holds true with reference to spinal fluid examinations. A number of tests are in vogue, each one of recognized merit, but also of limited value, if taken alone. There has been far too much work done in attempts to demonstrate parallelisms whereby one might argue that if one reaction was positive, certain others would be also. Bisgaard has tried to demonstrate a parallelism between the degree of pleocytosis and the Wassermann reaction; Wassermann and Lange between the same reaction and the type of lymphocytes present; Zaloziecki between the hæmolysin reaction and globulin content, but all without success. We are confronted with the fact that any one reaction may be present or absent in any luetic condition of the central nervous system. There are no infallible characteristic pictures, nor will one expect them if it is constantly borne in mind that the diseases under consideration are diffuse in nature, protean in their symptoms, and that there are many borderland and transitional cases of no certain clinical type. This by way of introduction to a point of fundamental importance: *every spinal fluid should be submitted to all the tests of known value and the results should be analyzed in the light of the clinical facts of the case.*

The routine procedure which has proved satisfactory in the study of several hundred spinal fluids, is given here, as representing the *minimum* requirements of an examination:

1. An estimation of the cell content: no method is better than that which employs a counting chamber and a diluting fluid containing some nuclear dye. In our own work, the Fuchs-Rosenthal slide has invariably been employed, since its use reduces to a minimum the margin of error of this rather uncertain procedure. A uniform method is highly desirable in the interest of comparative studies. Cell counts should always be made as soon as possible after puncture, for the cellular elements settle rather rapidly, and degenerate quickly. Opinions differ: Fisher and Walter<sup>16</sup> maintain that the degree of pleocytosis depends upon the extent of the involvement of the meninges in the lower parts of the spinal canal, in other words, in the area selected for the puncture. Nonne's experience is against this view, and my own observations upon different samples of spinal fluid, have led me to believe that there is a negligible difference in their cell counts. Normal values commonly accepted do not exceed five cells per cmm., 6-10 borderline, and 10 or more a pleocytosis.

2. Tests for increased globulin content. Of those most generally applied, we have had the best results with:

a. The Ross Jones<sup>17</sup> modification of Nonne's Phase I reaction, a layer test with saturated  $(\text{NH}_4)_2 \text{SO}_4$ .

b. Pandy's<sup>18</sup> test: the latter particularly has been subjected to comparative studies with both the Ross-Jones and Noguchi test, to both of which it is superior by reason of its great simplicity, and its clean-cut and immediate decisiveness. In my own experience it has not proved itself over-sensitive, and I have never been in doubt as to when a reaction was negative. Practically the same is true of the Ross-Jones modification: Henderson found it entirely satisfactory in a large series of cases. Either one of these is, I believe, preferable to Noguchi's butyric acid reaction, the disadvantages of which are doubtless known to all who have used it. A normal fluid gives no reaction with either test.

3. *The Wassermann Reaction.*—Though the exact nature of the Wassermann reaction is not yet known, certain facts regarding it have been pretty definitely established. The reaction is not an antibody-antigen reaction in the sense of Bordet and Genou, for extracts of normal organs act as antigens even better than do those prepared from cultures of the spirochete. It is likely that in this complement fixation reaction, lipoids play the chief role, directed by laws governing physical and colloidal chemistry. This was first realized by the observation of Porges and Meier, who found that many sera, but notably those fromluetics, possessed lipoid-precipitating properties. The capacity of a serum to give a positive Wassermann reaction,

is in some way connected with its globulin fraction, and with the formation of certain soaps, of a lipoid-protein nature. In fact, the colloidal studies of P. Schmidt<sup>19</sup> indicate that potentially, every serum is capable of giving a positive reaction, for merely by changes in its colloidal properties, and without change in its chemical composition, it can be made to give a complete complement fixation. This change is in some way bound up with the relation of globulin to albumin. It is possible that further colloidal-chemical studies may yield a complete explanation, not merely of this reaction, but of Ehrlich's entire side-chain theory.

It is impossible at this time, to enter upon a discussion of the technic of the Wassermann reaction; the busy practitioner cannot be expected to perform it. But it is his duty, thoroughly to understand the nature of the test and what constitutes an accurately controlled technic. I believe it is the consensus of opinion of most careful observers, that thus far no modification or short-cut has been found the equal of or superior to the method originally described by Wassermann and Bruck. Every Wassermann series, should be preceded by a suitable titration of the complement to be used. Every serum or spinal fluid should be tested against at least two and preferably three antigens, each of a different nature and each carefully standardized in terms of its antigenic and anti-complementary values. The reaction is essentially a quantitative one; for this reason satisfactory reports should definitely state with what amounts, maximum or minimum, a given specimen was either negative or positive. As to the methods commonly employed of representing the degrees of fixation by numbers or plus signs, little can be said in their favor. With one system the figure 4, with another 4 plus marks, with another one plus mark, represent the same end result, namely *complete fixation*. But these results are in no way comparable, since in one instance only two "antibody-units" may have been present, in another twenty. Until the adoption of a standard Wassermann technic, I presume we must continue to use the current methods of expressing the results; but at least let us not lose sight of their inherent fallacies.

4. *The Colloidal Gold Test.*—In attempting to apply Zsigmondy's earlier results to the quantitative study of the proteins of the spinal fluids, Lange, in 1912, discovered this reaction, which has since received rather extensive study. In a recent article, in collaboration with Dr. R. H. Levy<sup>20</sup>, the author described in detail the technic of the reaction, and the results obtained in a fairly large and varied series of cases. Aside from the preparation of the colloidal gold solution, the test is extremely simple, remarkably sensitive, requires a minimum amount of spinal fluid, and can be carried out in 5-10 minutes. The published results of most observers speak

well for the value of the test, some Germans even going so far as to designate it "the fifth reaction."<sup>21</sup> The color changes which constitute various types of positive reactions are entirely absent with normal spinal fluid.

It will be noticed that there is no mention in the routine examination, here suggested, of pressure determinations or reduction tests. Either one can be made without the slightest difficulty, if desired, but neither possesses any particular diagnostic value. When intraspinal injections are to be made I believe that the use of a suitable manometer is desirable as a check upon the amount of fluid that can be safely withdrawn. Most normal fluids will reduce Fehling's solution with varying degrees of promptness and intensity. Personally, I have been unable to derive much help from reduction tests in abnormal fluids; certainly the great majority, without regard for the clinical type of case from which they come, promptly give positive reactions. Among those that have failed to do so, or have reacted very slowly, I have seen several from undoubted cases of paresis. This is not in accord with Kaplan's<sup>22</sup> findings. Believing that fairly characteristic charts can be drawn up if one studies more exhaustively every spinal fluid, Kafka<sup>23</sup> includes in his routine, in addition to the tests already mentioned, an estimation of the total protein content, the Weil-Kafka<sup>24</sup> hæmolysin reaction, titrations of the complement content of the blood and fluid, and fractional precipitation tests with ammonium sulphate. Opinions differ as to the practical value of these methods, though no one denies their theoretical importance and the fact that each one may shed some light upon the complexity of the spinal fluid. Total protein determinations may be made either with Nissl's method, which is merely a modification of Esbach's method for quantitative albumen estimation in the urine, or with Zaloziecki's modification of Brandenburg's<sup>25</sup> method. Such determinations are rarely made for it has been shown that not infrequently the significant globulin increase occurs without any total protein increase, while the reverse is never true. Perhaps the most interesting result is that reported by Bisgaard<sup>26</sup>, who worked on the relationship between globulin and total protein. He found that paretic fluids are "globulin-stark" as contrasted with cerebral lues, the proportion being 7.3. In other words, it is characteristic of the spinal fluid in paresis that at least one-half of the total protein is made up of globulin. Some doubt still exists as to the merit of the hæmolysin reaction, though Hauptmann, Boas, and Neve and Brueckner<sup>27</sup> are unanimous in reporting its positive occurrence in about 80 per cent of paretic fluids, and its consistent absence in fluids which are negative otherwise. Its diagnostic value is asserted for the differentiation of cases of cerebral arteriosclerosis, cerebral lues and alcoholic pseudo-paresis, from true dementia

paralytica. It has also been observed in 5 out of 19 cases of secondary lues, further evidence according to Kafka<sup>28</sup>, that this reaction gives a clear picture of changes in the vascular permeability of the choroid plexus. The same author particularly urges the testing of every fluid with concentrations of  $(\text{NH}_4)_2 \text{SO}_4$  ranging from 28 to 50 per cent. He correctly points out how tremendous is the subjective factor in reading qualitative globulin tests. Precipitates of the same size are by no means alike in their globulin content. By this fractional method, for example, it has been shown that the globulins of a paretic fluid are thrown down by concentrations of ammonium sulphate commencing as low as 33 per cent, those from a case of acute meningitis at 28 per cent. Complement and amboceptor titrations of the blood and spinal fluid, in association with the above method may throw some new light upon the questions of antibody content and vascular permeability, but as yet they have given no decisive results. Particular mention is made here of these various tests because it is probably true that they represent important leads for further intensive study.

It has seemed to me unnecessary to enter into a detailed discussion of the occurrence of these various reactions in the different forms of syphilis of the central nervous system. The usual findings are doubtless familiar to you all. For the sake of completeness, however, I have drawn up a table which includes the observations of a number of those who have paid special attention to this phase of neurology.

Careful analysis of the compilation of Table I at once impresses one with a point of fundamental importance, namely, that *any abnormal reaction in the cerebro-spinal fluid may be present or absent in any luetic involvement of the brain or spinal cord*. It is undoubtedly true that certain combinations occur with a frequency sufficient to make them fairly characteristic of some clinical conditions, but there are always notable and puzzling exceptions. It is, therefore, misleading and dangerous for one to assert that, if a spinal fluid fails to give a reduction test, one may exclude paresis (Kaplan). A typical colloidal gold curve has invariably been observed by Dr. Levy and myself in nearly 200 typical clinical cases of paresis; the occurrence of such a reaction is very strong presumptive evidence of general paralysis, and may even occur in the spinal fluid of a paretic, showing a negative Wassermann reaction (Fordyce<sup>29</sup>, Van Wart<sup>30</sup> and personal observations). The fact, however, that a "paretic curve" may be present in cases diagnosed cerebral lues, severe meningo-vascular syphilis, or even multiple sclerosis, shows the wisdom for disclaiming the *absolute* specificity of the reaction. Complete fixation with minimal amounts of fluid is the rule in dementia paralytica, but a similar result may occur in other and less serious conditions.

A pleocytosis of 100 or over does not by any means permit of a diagnosis of cerebro-spinal lues to the exclusion of tabes and paresis. Evidence is rapidly accumulating which shows that the cell count varies too much in any one condition "to permit of reasonable deductions upon a numerical basis." Positive globulin tests are significant of the existence of some organic dis-

ease of the central nervous system, not necessarily syphilitic. Other examples might be cited to emphasize the point that the laboratory diagnosis of the diseases under consideration can be rationally based only upon the results of all available methods which can be applied to the spinal fluid and, of course, to the blood as well.

TABLE I.—SHOWING THE GENERAL NATURE OF THE CEREBRO-SPINAL FLUID CHANGES OBSERVED BY DIFFERENT AUTHORS IN VARIOUS TYPES OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.

| NAME OF AUTHOR                | SECONDARY LUES  | TABES DORSALIS   | CEREBRO-SPINAL LUES   | PARESIS   |
|-------------------------------|---|--|---|---|
| FORDYCE                       | Finds abnormalities in the spinal fluid in less than 20% in the absence of symptoms pointing to C. N. S. involvement.             | <i>Active Cases</i><br>Pleocytosis—11-235.<br>Globulin Test—Positive.<br>S.-F. Wassermann—Positive in majority using .2 cc.<br>Blood W. R.—Positive 66%.<br><i>Quiescent Cases</i><br>Pleocytosis—3-20.<br>Globulin Test—Generally positive.<br>S.-F. W. R.—Generally negative.<br>Blood W. R.—Generally negative.   | Pleocytosis—20-1000.<br>Globulin Test—Generally positive.<br>S.-F. Wassermann—Usually strongly positive.<br>Blood Wassermann—Usually strongly positive.<br><i>Endarteritis Cases</i><br>Pleocytosis—7-12.<br>Globulin Test—Often positive.<br>S.-F. Wassermann—Generally negative.<br>Blood Wassermann—Positive 66%.  | Pleocytosis—20-240.<br>Globulin Test—Strongly positive.<br>S.-F. Wassermann—Inhibition in majority to .1 cc.<br>Blood W. R.—Strongly positive.<br>Has seen a fluid with negative W. R. react positively to colloidal gold test.   |
| NONNE                         | Abnormal findings in 40% of his cases. Increased cell count the commonest finding.  | Pleocytosis—90-95% of cases.<br>Globulin Test—Positive 95%.<br>S.-F. Wassermann—Positive in 20% with .2 cc.; positive in 100% with 1 cc.<br>Blood W. R.—Positive 60-70%.   | Pleocytosis—Always increased.<br>Globulin Test—Almost always positive.<br>S.-F. Wassermann—Positive in 20% with .2 cc.; positive in 100% with 1 cc.<br>Blood Wassermann—Positive in 70-80%.   | Pleocytosis—Positive 95%.<br>Globulin Tests—Strongly positive 95-100%.<br>S.-F. Wassermann—Positive in 90-95% with (.2) cc.; positive in 100% with 1 cc.<br>Blood Wassermann—Positive in 100%.  |
| KAPLAN                        | Not discussed.  | <i>So-called "Usual Type"</i><br>Pleocytosis—Common, 25-95/cmm.<br>Globulin Test—Normal.<br>S.-F. Wassermann—"Negative in greater number of cases."<br>Blood Wassermann—"More often positive than negative" (68%).<br>Reduction of Fehlings—Always prompt.<br>Gold reaction not characteristic.<br>Fluid entirely normal in 7%.<br>Fluids with cells increase only 2%.<br>"Wassermann fast" fluids 8.5%.<br>"No combination of serologic findings that always indicates existence of tabes." | Pleocytosis—Over 100 in 96.7%.<br>Globulin Test—Positive in 50.3%.<br>S.-F. Wassermann—Positive 32.7%.<br>Blood Wassermann—Positive 88.7%.<br>Normal or border line counts in endarteritis cases with positive W. R. in blood and S.-F. and globulin test in 50%.<br>Fluids may not reduce Fehling's solution.<br>Paretic gold reaction observed in less than 5% of cases.<br>Gold reaction not characteristic. | Pleocytosis—Positive in 96.2%; counts generally less than 60/cmm.<br>Globulin Tests—Positive in 86.7%.<br>S.-F. Wassermann—Positive in 75.3% with .2-5 cc.<br>Blood Wassermann—Positive in 90.9%.<br>Fehling's Reduction—Prompt in 100%.<br>"Step-ladder" gold curve in over 93%.<br>Latest work claims specificity for this reaction in paresis. |
| PLAUT, REHM, and SCHOTTMULLER | Pleocytosis in 33-50%.<br>Globulin Tests—Often positive.<br>S.-F. Wassermann—Occasionally positive.<br>Blood Wassermann—Positive. | Pleocytosis in 85-90%.<br>Globulin Test in 90.95%.<br>S.-F. Wassermann—Positive in 87% of cases.<br>Blood Wassermann—Positive in 70% of cases.<br>All reactions negative in 7%.  | Pleocytosis present 85-90%.<br>Globulin Test—Always positive.<br>S.-F. Wassermann—Often positive, especially with large amounts of fluid.<br>Blood Wassermann—Positive in 90%.  | Pleocytosis—30-381 (in 98% of cases).<br>Globulin Test—Positive in 100%.<br>S.-F. Wassermann—Positive in 97% with .1-.05 cc.<br>Blood Wassermann is rarely negative.  |
| SWIFT and ELLIS               | 36% of their cases showed some kind of abnormality.   | Pleocytosis present in 83%.<br>Globulin test present in 87%.<br>Spinal-Fluid Wassermann positive in 23% with .1 cc.; positive in 86% with .5 cc.<br>Blood Wassermann positive in 66%.  | Pleocytosis—Generally shows wide variations, 2-560/cmm.<br>Globulin Tests—Generally strong.<br>S.-F. Wassermann—Positive in 33% with .1 cc.; positive in 94% with .5 cc.<br>Blood Wassermann generally positive.<br>Often no abnormalities in cases of cerebral endarteritis.   | Pleocytosis—Always moderate increase.<br>Globulin Test—Strong.<br>S.-F. Wassermann—Positive with .05 cc.  |

Of recent years, particularly since the introduction of intraspinal therapy, the examination of the spinal fluid has assumed great significance as an index of the efficacy of treatment and hence of the probable outcome of a case. The aim of therapy, of course, has always been to convert an abnormal fluid into a permanently normal one. There can be no doubt that this method of treatment has been responsible for the cure of certain types of cases, and for the amelioration of symptoms which, hitherto, have resisted most other procedures. It is also true that not a few clinicians in their enthusiasm to report cures, have drawn deductions that are unwarranted from changes in the spinal fluid. As the result of observations made in the Phipps Psychiatric Clinic, I am convinced that the reduction of a pre-existent pleocytosis is practically without significance, unless other abnormal reactions change also. In paresis especially, case after case with normal cell counts have continued to give strong reactions of every other kind, with or without clinical improvement. Moreover, it must be remembered that the clinical evidences of a paretic's cure are not tidier habits, a more orderly behavior, an improved physical status or a negative spinal fluid Wassermann. The latter may mean only an extinction of the infection with its residual irreparable degeneration; the former nothing more than a remission, natural or induced. The measure of cure should be gauged by the patient's degree of insight, careful studies of the characteristic memory defects, and the return, partial or complete, of normal reflexes and pupillary reactions. Moreover, such observations must be extended over years and controlled by periodic laboratory examinations. The impression gained from the studies of the past two years is to the effect that even intensive treatment is hopelessly inefficient in the eradication of the lesions of a well-developed case of paresis and the abnormal spinal fluid changes which accompany such a condition. Too often specific therapy modifies only the symptoms of the disease, not the process causing them. These symptoms in dementia paralytica at least are "due to degeneration of nerve elements, and since such structures can have no power of regeneration, no remedial measures can prevent the progress of the degeneration to the furthest limits of the neuron." The situation is quite different in cases where clinically the evidence points to luetic changes in the blood vessels and meninges. Here one finds spinal fluid changes abnormal in proportion to the extent of the involvement of structures within the spinal canal, frequently negative or but weakly positive when the disease process is essentially intra-cranial. In these cases not only is cure conceivable, but indeed probable, for not infrequently both blood and spinal fluid can be made quite negative. Head and Fearnside<sup>31</sup> point out that "no complete diagnosis or prognosis can be made until the

patient has been under observation and treatment for at least six months and the cerebro-spinal fluid has been systematically examined from time to time."

It is clearly recognized that many phases of the relations of the cerebro-spinal fluid to the diagnosis, prognosis and therapy of syphilitic disease of the central nervous system have been inadequately treated or omitted entirely in this paper. It is thought, however, that enough evidence has been brought forward to warrant the following conclusions:

1. The central nervous system is not infrequently invaded by the *Treponema pallidum* in the earliest stages of its generalization in the human host. This fact is conclusively proved by the frequency with which abnormal changes may be demonstrated in the spinal fluids of individuals in the acute secondary period. Of the total number showing such changes, only a small percentage subsequently develop luetic disease of the nervous system. The precise factors which determine this incidence are not yet known.

2. Certain fairly characteristic and regular reactions in the cerebro-spinal fluid are of pronounced value in the diagnosis of syphilis of the brain and spinal cord. No one is pathognomonic of any condition. Conclusions, therefore, to be of any value, must be based upon the analysis of all available clinical and laboratory data.

3. There can be little doubt as to the wisdom of making periodic spinal fluid examinations in all cases, treated or not, known to have had a luetic infection. The information to be gained will doubtless prove of great value, first, in the prevention of tabes, of cerebro-spinal lues and of paresis; secondly, in broadening our knowledge of the exact processes underlying these diseases; and thirdly, in determining the conditions, biological and physical, which favor their occurrence; and fourthly, in controlling the efficiency of our therapeutic measures.

4. There is urgent need for standardizing the methods of spinal fluid examination and the Wassermann reaction. The varying and discordant results of good observers is in part due to the employment of different methods and the expression of presumably identical results by all sorts of different terms or symbols. It is felt that the adoption of a uniform technic would greatly advance our knowledge, make possible the comparison of a greater number of cases, and serve as a more reliable check upon the benefits of various forms of treatment.

5. The chief point to be emphasized is the urgent need of diagnosing syphilis of the nervous system before the causative organism has been able to build up its defensive mechanisms and to initiate irreparable degenerative processes in the tissues of the host. This

can probably be done, in part at least, provided intelligent use be made of lumbar puncture.

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## ORGANIC OBSTRUCTION OF THE ILEUM AS A CAUSE OF GASTRIC DISTURBANCE.\*

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**D**URING the last few years a great deal of attention has been devoted to the study of the disorder known as intestinal stasis. This, according to Sir Arbuthnot Lane, who was probably the first to call especial attention to the affection, is characterized by stagnation of the intestinal contents, resulting in the production of toxic material, which is absorbed in greater quantity than the human anatomy has the capacity to render inert or excrete. In consequence there result degenerative changes in various tissues of the body and diminished immunity to infectious diseases. In the direct or indirect action of these disease-producing agents have been ascribed a great number of affections, including various affections of the stomach, gall bladder, liver, pancreas, kidney, skin, nervous

system, and lungs. Indeed, according to Sir Arbuthnot Lane, intestinal stasis is a direct or indirect cause of disease in every organ of the body.

In the genesis of intestinal stasis, Sir Arbuthnot Lane thinks that caecal stasis is the primary condition, and that this tends to drag down the abdominal viscera with the production of stress on the attachments of the intestines which results in the formation of anatomical abnormalities such as those known as Jackson's membrane and Lane's kinks. He is of the opinion that these bands and kinks frequently lead to stagnation of intestinal contents in the ileum (ileo-stasis), and that it is in this part of the intestinal canal that the production and absorption of toxic substances generally occur.

The malady, intestinal stasis, can scarcely be called a new disease. The great majority of cases now called intestinal stasis were formerly placed under the heading of habitual constipation; only a small proportion being thought to be due to organic obstruction. Neither is the conception that intestinal stasis is a common cause of disease in other organs of the body new; for from time immemorial the beneficial effect of purgatives in the treatment of diseases of almost every organ of the body has been recognized. The extent of the use of patent medicines, the therapeutic value of which is generally due to a purgative constituent, also suggests the same inference.

Under organic obstruction of the ileum, in addition to intestinal stasis caused by adhesions and kinks, is included obstruction due to nodular tuberculosis, cancer, volvulus, and intussusception of the viscus. These latter morbid conditions, however, form clinical entities by themselves, and are not usually included as causative agents of ileo-stasis.

In this paper the subject of stagnation of food in the ileum (ileo-stasis), due to organic obstruction as a cause of gastric disturbance is considered; but, in order that presentation of the subject is made more explicit, I shall, before discussing the subject of organic obstruction, refer briefly to other causes of ileo-stasis and their relations to gastric symptoms. In my opinion the causes of ileo-stasis which should be especially recognized are:

- (1) Atony of the ileum.
- (2) Regurgitation of the ileo-caecal valve.
- (3) Spasm of the ileo-caecal valve.
- (4) Caecal stasis.
- (5) Organic obstruction of the ileum.

*Atony of the Ileum as a Cause of Ileo-stasis.*—In the passage of food along the alimentary tract a very remarkable feature is the rapidity with which it passes through the small gut. If one gives a small meal, such as that used in radiological work, the food leaves the stomach in

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about three or four hours, and about three hours later passes into the colon.

The further progress of the intestinal contents is relatively slow. It probably takes longer for the intestinal contents to travel three feet of the colon than it does for twenty-two feet of the small gut. The inference which we should draw from this is that nature's intention is that the small intestine, like the stomach, is a digestive tube and not a receptacle for food residues, and that it is essential for health it should be free from food-stuffs at least once in twenty-four hours, and probably before each meal, as in the case of the stomach. If there is a delay in the propulsion of the intestinal contents from the ileum into the cæcum, ileo-stasis is said to exist. This can only be determined with certainty in one way, namely, by examination with the X-rays. If a residue of barium remains in the small intestine more than seven hours after the meal is ingested, the motility of the intestine is below normal, and the longer the time it requires for the meal to pass into the cæcum, the greater the degree of hypo-motility.

I should like in this connection to say a few words about the relations of motor function of the stomach and ileum. In the study of the motility of the ileum we should always keep in mind the fact that the neuro-muscular structures of the stomach and ileum are very much alike. In both, the vagus is the motor nerve and the sympathetic the inhibitory. In both, Auerbach's plexus is present. Both viscera exhibit rhythmical movements after being separated from their extrinsic nerve supply; but whether these movements are of myogenic or neurogenic origin has not been definitely determined. The presence of Auerbach's plexus in the walls of the stomach and intestine suggests a neurogenic origin, but we should not give too much weight to this argument, for a local plexus of nervous tissue is always to be found in the innervation of smooth muscular fibres. The very recent observations of Arthur Keith that nodal tissue, similar to that of the bundle of His in the heart, is to be found in the alimentary canal, is strong evidence in favor of the myogenic theory. One might mention other physiological, experimental and clinical facts illustrating the close relationship of the stomach and small gut; for instance, both viscera are similarly affected by drugs which influence the motility, such as eserine, pilocarpine, and adrenalin. Again, both viscera seem to be influenced alike by depressive nervous factors. Cannon was probably the first to call special attention to this characteristic. In his experiments he found that in animals sick with distemper and other affections characterized by general asthenia, food would frequently lie in the stomach and intestine all day without the slightest sign of peristaltic wave. He also observed that when the stomach and intestines were disconnected from the central nervous system, an animal, though extremely asthenic from disease,

would frequently exhibit normal activity of these viscera. This latter observation indicates that the loss of motility in the stomach and intestines in the asthenia of infectious diseases is due principally to inhibitory influence originating in the central nervous system. It also suggests, in determining the cause of ileo-stasis in any case, that the condition of the nervous system should be carefully considered. Cannon also made some observations on the influence of the emotions on the motility of the stomach, which are worthy of note in this paper. He found that in all states of anxiety and worry the peristaltic movements of the stomach stopped, but as soon as an animal was relieved of all sources of irritation the normal movements of the stomach began again. With regard to the influence of emotions on the small intestine, there is some difference of opinion. From the fact that the extrinsic innervation of the stomach and small intestine are practically the same, one would think that the movements of the two viscera would be alike. Cannon found this to be true in some animals. On the other hand, Esselmont and Fubini found that fear excited peristalsis in dogs; and Darwin observed that in the same animal excitement may cause uncontrollable voiding of the gut. This observation is in keeping with the well-known fact that excitement in some individuals may result in uncontrollable evacuation of the bowels.

The explanation of this want of unanimity among observers on the influence of emotions on the intestine is that the small gut receives its motor supply from the bulb, whereas the large intestine is supplied partly from the bulb and partly from the sacral cord. The extrinsic innervation of the latter is similar to that of the bladder. Under emotional disturbances, therefore, it is possible that evacuation of the bowels may occur without excessive peristalsis of the small gut.

The close anatomical and physiological relationship between the stomach and the small intestine has an important bearing on the etiology of ileo-stasis, for one should expect that both viscera would be affected alike by nervous disturbances. We recognize that gastric atony is very common and due to a great variety of causes, of which worry and anxiety over business difficulties and asthenia following infectious diseases and other constitutional disorders, are the most important. It is probable, therefore, that similar agents produce atony of the small intestine. This is the view held by Lane and Jordan. That such is the case I should like to present the following clinical evidence:

1. In a considerable proportion of cases of ileo-stasis there is a history of marked improvement during periods when the patient has been on a vacation.
2. A large proportion of cases of ileo-stasis can be cured without surgical procedures.
3. That slight adhesions resulting from surgical operations and the disturbance of peristalsis

brought about by lateral anastomosis do not often give rise to subjective symptoms.

4. That intestinal stasis is more common in persons who lead sedentary lives with much brain work than in those who live in the open air and take a great deal of physical exercise.

These data indicate that ileo-stasis due to atony alone or atony associated with organic obstruction, is common. This has an important bearing on the subject of my paper, because if organic obstruction of the ileum were present in a patient with an asthenic state of the neuromuscular system, which is a very common disorder, the symptoms referred to the stomach caused by the organic obstruction would be associated with those caused by atony of the stomach and small intestine.

*Regurgitation at the Ileo-cæcal Valve as a Cause of Ileo-stasis.*—From an anatomical and physiological standpoint the ileo-cæcal valve and mitral valves of the heart are somewhat similar. Both have the bicuspid structure. The mitral opening is closed by two cusps being forced together by the pressure of the blood in the left ventricle, and to a certain limit, the greater the pressure the more closely the valves are in apposition. The same is true of the ileo-cæcal valve, although contraction of the circular muscular fibres of the valve is a factor in the closing. I believe, however, that it is the intracæcal pressure which is the principal agent in closing the valve. In the normal individual, the contents of the ileum may pass into the cæcum, but the regurgitation of cæcal contents cannot occur. In persons who have suffered from appendicitis the condition is frequently different, for in such individuals more or less regurgitation at the valve is often present. One may be able to show this by radiographic examination after a barium enema. In the cadaver one can frequently demonstrate the condition by forcing the air out of the transverse and ascending colon into the cæcum; when in the normal, there will be no escape of gas into the ileum with moderate pressure, but in the presence of adhesions about the appendix or cæcum, the ileum in many cases becomes distended. In mitral regurgitation the heart may become competent again by hypertrophy of the left auricle and right ventricle. A similar change may result in ileo-cæcal regurgitation by hypertrophy of the small gut. The pressure in the small intestine itself may be a factor in preventing regurgitation. Later, if the muscles of the intestine become atonic either through psychic disturbance, general debility or enteritis, regurgitation again occurs, and the motor function of the intestine is incompetent.

There is a feature about the mechanism of the ileo-cæcal valve which requires careful investigation. From what has been said it is evident that the principal force in closing the valve is the intracæcal pressure due to the contraction of the cæcum, while the valve is probably opened by the force of the pressure in the ileum. Two ex-

planations are suggested: (1) That the contraction of the ileum controls the mechanism of the valve, a peristaltic wave forcing the valve open, and as soon as the wave reaches the outlet, the valve closes. (2) That the contractions of the ileum and cæcum are co-ordinated as in the case of the auricle and ventricle. If the latter view should prove to be correct it is probable that the pace-maker of cæcal contraction is situated in the lower end of the ileum. This suggests that in cases of intestinal stasis characterized by regurgitation of the ileo-cæcal valve with compensation broken down, we may in future speak of fibrillation and flutter of the ileum just as we now speak of fibrillation and flutter of the auricle in some incompetent hearts.

I should like in this connection to mention a clinical observation which may have a bearing on the co-ordination of the motor function with that of the cæcum. It is that in marked cases of ileo-stasis of organic origin of the lower end of the ileum characterized by excessive peristalsis of the ileum and impaction of the barium in the ileum against the cæcum, the latter is frequently found empty, although there is frequently barium in the splenic flexure of the colon and rectum. It would appear from this that the excessive peristalsis in the ileum in some way brings about excessive peristalsis of the cæcum. A somewhat similar relationship exists between the stomach and intestine for, in duodenal obstruction due to peptic ulcer, there may be a residue of barium in the stomach after seven hours, and at the same time the small gut practically empty. In these cases there is generally excessive peristalsis of the stomach which in some way produces hypermotility of the small intestine, although the peristaltic wave of the former viscus stops short at the pylorus. In organic obstruction of the pylorus, in the early stage at least, the same phenomena are observed.

Let us now consider for a moment how ileo-cæcal regurgitation may cause gastric disturbance. This is germane to my paper, because ileo-cæcal regurgitation is a common complication of organic obstruction of the ileum. In discussing the subject I may be permitted again to call attention to the rapidity with which, in health, the contents of the small intestine are propelled into the cæcum, and also to the mechanism of the ileo-cæcal valve which in the normal does not permit regurgitation. It is evident that nature intends that there shall be a sharp division between the small gut, which is a digestive tube, and the large bowel, which is essentially a receptacle for the by-products of digestion. The high vascularity of the small compared with that of the large intestine is in keeping with this view. The observation of Vaughan Harley, that after the removal of the colon in dogs there was an increase in quantity of fæces, but mainly due to unabsorbed water, the nitrogen and protein absorption being only slightly diminished, is additional evidence in favor of it. This



observation also indicates that practically all the nutritive material, except water, for the maintenance of nutrition is absorbed from the small intestine.

The principal way in which ileo-cæcal regurgitation may cause gastric symptoms, is by causing auto-intoxication. In the normal condition it is highly probable that bacterial growth, inimical to health, is unimportant in the small gut for reasons which have already been given, but in the large intestine the conditions for bacterial growth are much more favourable. Now, in cases of regurgitation at the ileo-cæcal valve, so far as germ growth is concerned, it is probable that the growth in the two bowels is more or less alike, especially if ileo-cæcal regurgitation is accompanied by ileo-stasis. This would result in auto-intoxication, for the small intestine has not the same defensive action as the large bowel. The question then presents itself, how does auto-intoxication produce gastric symptoms? In answer to this, I should say, first by causing mental depression, which again would have a marked action on the stomach, for the gastric digestion is closely dependent on the mental condition; secondly, by the action of chemical substances which have a direct action on the functions of the stomach. Recently a good deal of attention has been devoted to the study of these bodies, and most interesting results obtained. In illustration, I may mention that tyramine, a derivative of tyrosin, has been isolated from intestinal contents and found to be chemically related to adrenalin; and like the latter, it has marked stimulating action on the ends of the sympathetic, and would, therefore, tend to produce both gastric and intestinal stasis; thirdly, by diminishing the immunity of the individual, resulting in infection of some form which is invariably characterized by gastric symptoms.

*Cæcal Stasis as a Cause of Ileo-stasis.*—This is of special interest on account of the importance given to it by Sir Arbuthnot Lane in the origin of the bands and kinks which take such an important part in the production of stasis in the intestine. I may say that this theory of the sequence of disturbances has not been confirmed, and we are still in the dark with regard to the origin of Jackson's membrane, and the various kinks which are sometimes observed in intestinal stasis.

Cæcal stasis is said to exist when there is considerable residue of barium in the cæcum seven-teen hours after the ingestion of a barium meal. In the skiagrams of many cases of ileo-stasis a remarkable feature is that, although there is stasis in the small gut, the barium is propelled along the colon with normal or excessive rapidity. If, therefore, cæcal stasis is the common cause of ileo-stasis, the development of the obstruction in the small gut must cure the cæcal stasis. The only cases of ileo-stasis which are fre-

quently associated with cæcal stasis are those which occur in patients with abdominal viscera markedly displaced downward or with an old standing mucous colitis. Cæcal stasis unaccompanied by ileo-stasis is a common finding in spasm or organic obstruction of the rectum or of the colon distal to the cæcum. It is also not an uncommon finding in splanchnoptosis. Cæcal stasis probably always tends to produce ileo-stasis and to increase the severity of it due to other cause. It should, therefore, be looked upon as a contributory factor in the production of gastric symptoms of ileo-stasis. As a disorder by itself it may, by causing auto-infection or general infection, give rise to symptoms referred to the stomach.

*Spasm of the Ileo-cæcal valve as a Cause of Ileo-stasis.*—Spasm of the pylorus is quite different from that of the ileo-cæcal valve as the former is regulated by the reactions of the gastric and intestinal juices. An acid reaction in the duodenum closes the pylorus, whilst an acid reaction of the stomach and neutral reaction of the duodenum tends to open the outlet. The ileo-cæcal valve is closed principally by an increase of the intracæcal pressure and spasm of the valve may be said to exist when there is spasm of the cæcum. Now, in acute appendicitis, Mr. Fenner, of the Toronto General Hospital, informs me that radiographical examinations frequently show gastric hypertonus and barium in the stomach seven or eight hours after the meal is ingested, along with barium in the lower end of the ileum, but without any barium in the cæcum. This indicates that the causes of gastric stasis and ileo-stasis were spasm of the pylorus and ileo-cæcal valve respectively. The symptoms referred to the stomach in acute appendicitis are generally what one would expect to find in spasm of the pylorus and body of the stomach. The patients complain of sensations of fullness and pressure in the epigastrium, belching, pain in the region of the stomach, nausea and vomiting. The gastric distress is generally aggravated by eating and frequently partially relieved by belching. Vomiting also generally gives partial relief.

With regard to subjective symptoms referred to the region of the appendix there may be no complaint during the early stage when the patient may suffer from gastric symptoms. This is an outstanding feature of acute appendicitis. At this time, however, there is usually tenderness on deep pressure in the region of McBurney's point. The question arises why should the patient suffer from distress in the region of the stomach without distress in the region of the appendix? The most acceptable explanation, in view of the X-ray findings already referred to, is that a spasm of the cæcum is present sufficient to close the ileo-cæcal valve, but not sufficient to cause pain in the region, and that secondary to closing of the ileo-cæcal valve ensues spasm of the pylorus, resulting in the gastric symp-

toms which characterize acute appendicitis. In chronic appendicitis, and especially in its exacerbations, symptoms referred to the stomach are very common. These are generally relieved by removal of the appendix alone, even in cases in which adhesions that might lead to organic obstruction or disturbance of the mechanism of the ileo-cæcal valve are absent. From this it would appear that in acute or chronic inflammation of the appendix the gastric symptoms may be secondary to spasm of the cæcum. This is supported, I think, by the experience of surgeons.

*Organic Obstruction of the Ileum as a Cause of Ileo-stasis.*—In studying the genesis of gastric disturbance in organic obstruction of the ileum, it is well to remember that obstruction of any part of the stomach or intestine tends to produce increased peristalsis tonus of the part proximal to the obstruction. This is a physiological principle to which there is no exception. In organic obstruction of the ileum one should expect to find, therefore, signs and symptoms of increased tonus and peristalsis of the stomach and small intestine proximal to the seat of the obstruction. This is generally true in all cases of uncomplicated organic obstruction of the ileum.

In a case of marked obstruction of the lower end of the ileum, such as that sometimes caused by Lane's kink, radiographic examination frequently shows hypertonus and excessive peristalsis of the stomach, with a residue of barium after six hours. The subjective symptoms in such a case are belching, eructations, sensation of fullness and pressure in the epigastrium, pain after eating, nausea and vomiting. These symptoms are very similar to the gastric symptoms in acute appendicitis, which were referred to under spasm of the ileo-cæcal valve. Vomiting of blood may also occur, which feature suggests the presence of ulcer of the stomach. In many cases, however, it is probable that the hemorrhage was from an erosion which, for some unknown reason, is not uncommon in obstruction of the intestine.

The characteristics of the pain in the region of the stomach in ileo-stasis due to organic obstruction are very variable. This is probably dependent partly on the degree of stasis and partly on the nervous state of the patient. In some cases the time of appearing after eating and the intensity and nature resemble similar characters of the pain observed in gastric or duodenal ulcer. This feature often renders it difficult to determine whether the particular case is one of intestinal stasis alone or intestinal stasis associated with peptic ulcer. It has been said by some writers that localized tenderness is not present in the epigastric region in intestinal stasis. This I am satisfied is not correct, for I have frequently observed in patients suffering from the disease unassociated with any lesion

in the stomach that they exhibited localized tenderness in the region of the pylorus.

From what has been said it is obvious the symptoms referred to the stomach in ileo-stasis do not form a very characteristic group. It is not surprising, therefore, that the recognition of the disease by the consideration of the symptoms and signs without the aid of radiographic examination is frequently impossible. Some cases simulate chronic dyspepsia due to a gastric neurosis; others peptic ulcer of the stomach or duodenum; others again pyloric obstruction. Indeed, it may be said to simulate the majority of diseases of the stomach, and even gastric cancer. In a case recently under my care the patient, who was a merchant 45 years of age, had lost thirty pounds weight. An analysis of gastric contents gave a total acidity of 36.5, and free hydrochloric acid of 1.5. The sediment contained Boas-Oppler bacilli in small numbers; no occult blood in fæces or stomach contents. X-ray examination of the stomach showed gastric hypertonus. No X-ray examination of the intestines was made. On account of the presence of Boas-Oppler bacilli I gave an opinion that the case was probably malignant, and advised surgical treatment. An operation revealed a Lane's kink which was corrected; complete recovery followed.

Symptoms referred to the stomach in ileo-stasis of organic origin are determined to a considerable extent by the associated conditions or complications. Some of the latter are diseases of the stomach itself, such as duodenal ulcer and gallstones, which are prone to produce gastric symptoms; and others again are disturbances of the nervous system, such as neurasthenia and hysteria. Any one of these may be characterized by a group of gastric symptoms. It is obviously very difficult in any case to determine the part played by organic obstruction of the ileum in the genesis of the symptoms. This is the crux of the question of operative treatment of intestinal stasis at the present. I think that surgeons are wont to blame adhesions of the ileum for all the complaints of the patient and there is some reason for their doing so for, frequently after an operation for the removal of adhesions, etc., and the treatment associated with every surgical operation, there is a very marked improvement or a complete cure of the disease. The treatment of the patient, however, by the surgeon is not as a rule purely surgical. It might be said to consist of operative treatment plus a "cure" in which the habits of the patient are corrected, the diet improved, and instruction on hygienic lines generally given. For my part I am satisfied that in many cases the "cure" is more curative than the operative treatment, for equally successful results are obtained by medical treatment. Before the complaints of the patient are ascribed to anatomical changes we should make a thorough examination of all the organs of the body. We should remember that an asthenic state is

very common, and that when present it frequently gives rise directly to gastric symptoms as well as ileo-stasis; also that suggestion is frequently responsible for the symptoms of the patient.

## INTESTINAL PROLAPSE AND ADHESIONS.\*

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IT is just thirty years since Glenard called the attention of the medical world to ptosis or prolapse of the stomach and other abdominal viscera. The development of our knowledge on this subject may be roughly divided into two periods, one before 1900, the other subsequent to that date. During the first period, the subject was studied exclusively by internists. We did not have the assistance of the X-ray, nor the benefit of surgical or orthopedic experience. The theory of colon stasis and alimentary toxemia had not been clearly set forth. A very brief review of our knowledge up to the year 1900 may prove of service.

Glenard invented the term "enteroptosis" to designate a condition characterized anatomically by a descent of the transverse colon, the stomach and the right kidney, and clinically by symptoms of a dyspeptic and neurasthenic nature. He called particular attention to six points in the gastro-intestinal tract at which an acute angle causing obstruction might readily be formed, viz.: the gastro-duodenal and the duodeno-jejunal orifices, the hepatic and splenic flexures, the sigmoido-rectal orifice, and the middle of the transverse colon. An acute angle forming at any of these places would impede the progress of the gastro-intestinal contents, would increase the weight of the proximal part of the tract, but cause collapse of the distal tract. These two factors produce gastro-enteroptosis. The more important of the two factors is the collapse of the distal portion of the gut. The diminution in the volume of the intestine is the primary and most important factor in lessening intra-abdominal pressure and producing gastro-enteroptosis. The increased weight of the proximal part, due to overloading, causes that portion of the bowel to drag on its peritoneal attachments; these in time yield, allowing a descent of that part of the bowel. Thus, the small intestines drag on the mesentery and tend to pull it down towards the pelvis; the hepatic flexure is usually the first part to descend; this drags down the pylorus and indirectly the liver and the right kidney. The symptoms produced by this condition are first those of atonic dyspepsia, viz.: fulness in the epigastrium after eating, bloating, belching, drowsiness, lassitude, constipation. There fol-

low general debility, insomnia, emaciation, and finally the patient becomes profoundly neurasthenic.

Glenard's views were never accepted in toto, but called forth a great deal of discussion, especially in Germany and France. It was at once recognized that gastro-enteroptosis is far more prevalent in females than in males. Many causes of the condition were described. Most writers agreed that the abuse of the corset, the relaxation of the abdominal walls, especially after pregnancy, the debility following diseases, constipation and overeating were the most important causal factors.

The clinical symptoms associated with, and dependent on, gastro-enteroptosis were eagerly studied. Meinert thought that the chlorosis of adolescent girls was due to gastroptosis. Marked disturbances of secretion and motor function were ascribed to the prolapse. Nearly all of the symptoms (except cancer and epilepsy) now so broadly associated in the medical mind with colon stasis were confidently ascribed to gastro-enteroptosis as such.

In 1896, Stiller disclosed an entirely new point of view. He found that visceroptosis occurred almost exclusively in persons of a very definite anatomic type, viz: in nervous people, who had small bones, a thin fat-layer, a delicate muscular system, and in whom the chest was narrow, flat and long. He differentiated the normal broad thorax "habitus normalis" from what he called the "habitus enteropticus," which in nearly all details is identical with the plithysical habitus. His description of the habitus enteropticus is thus summarized by Cohnheim:

A long, small and usually flat thorax: a narrow costal angle, so that the xiphoid process is the apex of an acute angle. In patients with a normal habitus, this angle amounts to 120 degrees or more. Where habitus enteropticus occurs, the angle amounts to perhaps 60 degrees. The more acute this angle, the more marked is the habitus enteropticus, which is accompanied by a loosening of the costal cartilages, so that usually the tenth right and left rib fluctuate; and in severe cases, the cartilages of the ninth right and left ribs also fluctuate.

In habitus enteropticus, a vertical line drawn between the ensiform process and the umbilicus would be much longer than a line drawn at right angles to this vertical line and extending to the anterior axillary line. In normal habitus, on the other hand, this vertical line would be shorter or of about the same length as the line perpendicular to it, extending to the anterior axillary line.

Therefore, in habitus enteropticus, the epigastrium and hypochondrium have a greater longitudinal than transverse diameter, while in the normal habitus the transverse diameter of these regions considerably exceeds the vertical. This explains why it is that the organs occupying the epigastrium and the hypochondrium must assume a more vertical position than normally.

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Stiller affirmed that the so-called symptoms of visceroptosis are not due in the main to the anatomic displacements, but largely to the neurotic disposition of the patient. The so-called causes of visceroptosis (corsets, pregnancy, emaciation from disease, constipation, etc.,) are merely contributory factors; the patients have serious symptoms not so much because their abdominal organs are displaced, but because they are congenitally predetermined to be neurasthenics.

It would not be profitable here to follow in detail the further development of this subject. The large measure of truth in Stiller's observations was very generally recognized, and this recognition helped the profession very materially to estimate more critically the various symptoms associated with the disorder, and the various steps which are necessary to overcome them.

It is entirely proper to say that at the beginning of the present century internists had very generally agreed on the main features connected with the etiology, the symptomatology, the prophylaxis and the treatment of gastro-enteroptosis.

These conclusions may be summarized as follows:

*Etiology:* A certain hereditary predisposition does exist. Constitutional debility and mal-development play important roles. Pregnancy, emaciation and improper dress are often the deciding influences.

*Symptomatology:* The early symptoms are those of atonic dyspepsia, although the prolapsed viscera may functionate perfectly and all symptoms be absent. There is nothing at all characteristic about the early symptoms. In more advanced cases disturbances of motor functions, headache, constipation, dragging backaches and emaciation are common. The third stage is reached when the nervous system yields and a state of neurasthenia ensues.

*Prophylaxis:* Especial attention must be paid to neurotic children, particularly to those presenting the habitus enteropticus. Physical exercises and corrective gymnastics are exceedingly valuable. Dress reform, the care of convalescents, especially when emaciation is present, and the proper attention to the abdominal walls after childbirth, are all of the highest importance.

*Treatment:* General hygienic measures combined with an appropriate diet are sufficient in many cases. Many patients are made permanently neurotic by having their attention directed too persistently to the position of their abdominal organs.

A well fitting abdominal bandage is exceedingly helpful in many cases. It is certainly not indicated in every case. In the young, corrective gymnastics are to be preferred. Massage is often helpful.

From 1900 to 1915, the second period in the history of gastro-enteroptosis, various influences have tended to modify profoundly our views on this subject.

These influences may be grouped under the following heads:

- 1—The X-ray.
- 2—The theory of colon stasis and alimentary toxemia.
- 3—The theory of ileo-cæcal obstruction.
- 4—Orthopedic Considerations.
- 5—The entrance of surgery into the field.

#### THE X-RAY.

1. The X-ray has given precision to many ideas. By its use, the position of the stomach can be more definitely and readily mapped out than by former methods, and we now have an exact method of determining the position and mobility of the colon. The variations in the position of the colon which we formerly knew in a general way only, are now accessible to clinical study.

In any given case we are able to tell quickly and positively the position of the segments of the large bowel. But up to the present time, we are not able to tell merely from the position of the colon anything at all about its function. The cæcum may lie high or be entirely within the pelvis; it may be movable or fixed; the transverse colon may dip or form acute or obtuse angles; the sigmoid may seem never so redundant, the mere fact of these so-called angulations or displacements per se, does not permit us to draw any conclusions whatever. Hertz tells us that he has seen the cæcum down in the pelvis just as frequently in strong, healthy individuals with perfect digestion and no constipation, as in constipated persons. Certainly ptosis does not of itself lead to constipation.

2. The theory of colon stasis and alimentary toxemia.

This topic has been assigned to others, and I shall touch upon it only incidentally here. An entire mythology has grown up on this subject. Fancy has been given widest range, but actual facts are accumulating exceedingly slowly. It would seem to a critical mind that the burden of proof should rest strongly on those who would have us believe that toxic materials are actually absorbed in damaging quantities from the colon, and yet it would be hard to find a more widely spread opinion based on so little proof. Certainly in none of the exact sciences can an analogous situation be found.

3. The theory of ileo-cæcal obstruction has greatly impressed medical thought, but roentgenological and surgical investigations have not yet been able to rest on any assured foundations.

Hertz informs us that iliac stasis is a normal phenomenon, and results from the action of the ileo-cæcal sphincter. In 1903, Keith demonstrated in man the existence of this strong ileo-cæcal sphincter, and suggested that its chief function is to prevent the contents of the ileum from passing too rapidly into the cæcum. Hertz

found that the bismuth-containing chyme reaches the end of the ileum an hour or even longer before any appreciable quantity passes into the cæcum and that the ileum is often still full, four, five or even more hours after the last trace of bismuth has left the stomach. Case (Med. Rec., 1914, p. 407) tells us that Lane's obstructive ileal kink undoubtedly occurs, but there are numerous other cases in which kinks are found at the operation, but in which all the clinical and roentgenological evidence proved that there was no actual ileal stasis. That the ileo-cæcal valve is incompetent in many normal, as well as abnormal individuals, is amply proved by many X-ray observations. Von Bergmann (Berl Kl. W. November 9, 1914) assures us that as our experience grows, we shall become more conservative in drawing conclusions.

#### ORTHOPEDIC CONSIDERATIONS.

Goldthwaite is of the opinion that poor carriage, or imperfect poise, by depressing the diaphragm, and contracting the space under the ribs, causes a crowding down of the liver and the stomach, a relaxation of the abdominal wall, and a consequent downward drag on the kidneys, the colon and other abdominal viscera. If such is the case, merely changing the positions by operation or otherwise of the displaced organs, would be entirely ineffective, unless the entire form of the individual were also remodeled by corrective bandages and gymnastics.

The orthopedist aims to restore the body as nearly as possible to the normal poise, thus laying the foundation for a restoration to normal function. The means which Goldthwaite and others employ for this purpose, include the use of an appropriate brace to relieve strain on the spinal muscles, many postural exercises, massage, stimulating baths and when necessary rest in bed, sometimes protracted for many weeks.

#### THE ENTRANCE OF SURGERY INTO THE FIELD.

It is natural that an effort to restore prolapsed viscera to their normal positions by operative measures should have engaged the serious attention of many surgeons. After many years' effort and observation, most surgeons have reached the conclusion that not much benefit can be expected from operations in uncomplicated cases of visceroptosis.

William Mayo said, in 1912, that prolapse of the stomach is merely a phase of splanchnoptosis, and he would not often expect an operation to give relief. Nevertheless, some favorable results are recorded especially by Coffey.

Gibbon is of the opinion that no corrective operation is advisable when there is general visceroptosis, and warns us less we be led as far astray in the selection of cases for operation as we formerly were in the case of kidney (see Musser and Kelly, "Practical Treatment," pp. 384, 606, 607).

If now, after this rapid survey, we take a comprehensive backward glance and ask how the

contributions of many writers since 1900 have modified the best medical opinion held before that date, we must frankly confess that, after all the polemic and experimentation, little actual change has taken place. The X-ray has given us much new knowledge, surgery has experimented with mechanical measures, but it is generally recognized by the critical that intestinal stasis or toxemia has no relation with visceral prolapse as such—and after all is said and done (it takes a little courage to say it)—we stand in the same relation to gastro-enteroptosis today that we did fifteen years ago. In fact, many of the conclusions so painfully reached after years of study and reflection, have been swamped in the flood of new literature. The most valuable lesson of all—that many, if not most of these patients should have their attention diverted from the abdominal cavity rather than fastened upon it, is apt to be entirely lost in the zealous endeavors of the attending physicians and surgeons.

Countless women and men have been rendered hopelessly neurotic by ill-advised treatment, directed to so-called wandering kidneys, prolapsed stomachs and "dropped colons."

If one were to criticize the efforts of our orthopedic colleagues in this direction, it would be for this tendency of their practice to create rather than to cure neurasthenics. I am convinced that the many hours each day which many of these women and men must spend in postural exercises, gymnastics, etc., is a positive detriment to their happiness and efficiency. We must never forget that we are treating patients and not conditions. The indications for treatment today are the same as they were yesterday. The diet must aim at two results, first, to adapt itself to the secretory and muscular functions of the stomach and intestines; second, to bring the patient up to a normal state of nutrition. Correct hygienic living, combined with an appropriate diet, will relieve most patients. No set scheme is advisable. Many cases will require the application of an appropriate abdominal support. To render such an abdominal bandage really effective will frequently tax the highest skill. Most of these patients have a neurotic tendency. To be of real service to them requires all the tact and knowledge we can muster. To be fussy from a dietetic or orthopedic or medical standpoint, or to be meddling, surgically, will often prove calamitous to our patients. If I have permitted myself a rather tedious historical survey it was only in the hope that we might learn from the too easily neglected past.

#### INTESTINAL ADHESIONS.

The value of many recent discussions about intestinal disorders has been seriously impaired by the careless use of terms. The words constipation, intestinal stasis, intestinal toxemia, bands, kinks, adhesions, ptosis, have so often been jumbled together and used so indiscriminately that clear thinking about them is impossible. If

we consider the actual propelling power of the stomach and intestine, obstruction by an uncomplicated kink is incredible. A kink without an abnormal point of fixation is a nonentity. The X-ray picture of a kink is usually the artificial and misleading effect of one-plane photography, which stereoscopic roentgenography can easily demonstrate. A clinically important kink i. e. an obstructing kink can only occur when one or both limbs of the involved bowel is abnormally fixed by adhesions. A similar criticism might be applied to the use of the term stasis. When there is delay in the passage of food, or food residue, through the intestine, we speak of constipation. In its chronic form we speak of it as habitual constipation. Does the term stasis add anything to this meaning? Lane speaks of chronic intestinal stasis, only when the delay in the passage results in the deleterious absorption of poisonous material. As this does not always occur in cases of chronic constipation we must not use the words chronic constipation and colon stasis synonymously. When, therefore, intestinal adhesions cause obstruction and give rise to pain, or dyspeptic disturbances or interfere with the onward passage of fecal material, we should refer to these symptoms collectively as partial intestinal obstruction, and not as colon stasis, unless there is, in addition, a harmful absorption of toxic material. Equally common and still more confusing is the use of the words colon stasis and coloptosis as if there were any implied relationship between these two conditions. Colon stasis may exist without colon ptosis and vice versa. In fact, it is very questionable if prolapse of the colon *per se* leads to stasis. Schmidt (Darmklinik, p. 208) says that medical opinion is unanimous that the constipation which accompanies Glenard's disease is coincidental with the ptosis, not the result of it. The progressive surgeon Mummery (Diseases of the Colon, p. 108) says it is doubtful if any serious obstruction to the bowel lumen is produced by the angulations and kinks associated with visceroptosis. Finally, Case (*Med. Rec.*, 1914, November 21, p. 901) tells us that an increasingly large number of symptoms formerly attributed to ptosis are now found to be due to more tangible lesions."

Now, these "more tangible lesions" in a certain proportion of cases are found to be pathological intestinal adhesions. A complete survey of the nature and results of intestinal adhesions does not come within the scope of this paper, but a few remarks from the standpoint of an internist may be permitted.

It is well known that the most widespread adhesions matting together many feet of intestines may exist without producing any symptoms whatsoever, and altogether escaping demonstration by the X-ray. On the other hand, it is undoubtedly true that certain slight adhesions, which seem insignificant in themselves, may be the cause of obstinate and serious derangements

of function. The most frequently met adhesions in this latter class are those running from a diseased gall bladder to the first portion of the duodenum.

Equally important are the adhesions which so frequently complicate pelvic inflammations or follow pelvic operations. Constrictions at the junction of the abdominal and pelvic portions of the colon are especially annoying. Adhesions which form after appendectomy when drainage was necessary are common.

The one feature which all of these conditions have in common, is that when they produce symptoms at all, these are apt to be of a character implying more or less obstruction. The cardinal symptoms of these imperfect forms of obstruction are varying degrees of pain, and various degrees of distention with gas. In general, the higher the involvement the more apt are we to have gastric symptoms, especially nausea or belching. It is extremely important to remember that when obstruction exists, measures which increase peristaltic action tend to increase the symptoms; those which lessen peristalsis, lessen the symptoms. When purgatives uniformly cause increase of suffering, especially more distention and irregular pains the suspicion of adhesions is justified. Pains due to adhesions are apt to be repeated at certain intervals, so many hours after a meal, or when a particular part of the bowel is filling or when the patient assumes particular attitudes. It is my experience that habitual constipation, when it is dependent on adhesions, is always associated in a greater or lesser degree with some of the above symptoms, and we may conclude that constipation unattended by these symptoms, which may, it is true, be masked or apparently insignificant, is rarely ever organic in character. It should be borne in mind that the vast majority of cases of constipation are curable medically, that is, with exercise and an appropriate diet. When the cases resist treatment, when a close study of the symptoms suggests organic obstruction, then, as a rule, the roentgenologist will be able to demonstrate points of abnormal fixation. This can be done by pictures taken in different positions, or better, by fluoroscopy during abdominal manipulation.

It cannot be denied that in not a few cases, obscure abdominal symptoms are caused by bands, adhesions and abnormal fixations. These symptoms may be persistent or intermittent and may or may not be demonstrated by the X-ray. One point which needs emphasis is, that it is the attending internist who must decide whether the condition and symptoms of the patient warrant an operation or not. The roentgenologist should never be the court of last resort, nor should the surgeon base his opinion upon the roentgenogram alone in making a decision. The summed up clinical picture which includes the presumptive diagnosis, the gravity of the symptoms, the willingness or ability of the patient to endure

them, the results of medical treatment, the problematic results of surgical intervention, all of these factors together, interpreted by an experienced and trained observer, must finally make the decision.

### INTESTINAL STASIS.\*

By ALLEN A. JONES, M.D.,  
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**I**NTESTINAL stasis may exist in one of many degrees and forms from acute to chronic. In its acute form it constitutes a startling clinical condition which attracts immediate serious attention, and calls forth imperative demands for diagnosis and relief.

In introducing the subject for discussion it will be best to mention in a rather concise way a few of the simple and familiar facts which a consideration of the topic will suggest. Acute stasis results only when intestinal obstruction is positive and is brought about by a pathologic state causing blocking or constriction, or by a complete intestinal paralysis from some interference with the neuro-muscular function of the bowel. It may occur either in the small, or in the large, intestine.

Acute stasis from:

(a) Obstruction in the small intestine may be due to:

1. Intussusception.
2. Hernia.
3. Volvulus.
4. Adhesions or kinks.
5. Foreign body.
6. Ulcers and cicatrices.
7. Peritonitis, general or local.
8. Pressure upon the intestine by tumor, or by another organ.

The ileo-cæcal region is especially apt to be the seat of some of the above conditions, for instance:

1. Appendicitis.
2. Bands, adhesions and kinks.
3. Intussusception.

When the symptoms of acute obstruction develop, the question as to its nature and location is immediately forced upon the diagnostician.

Severe abdominal pain and vomiting are two of the most constant symptoms. A previous history of abdominal disease may be elicited in some cases of adhesions, kinks, ulcers and cicatrices, tumor-pressure or peritonitis, and may aid in the diagnosis; whereas in cases of intussusception, internal hernia or volvulus the onset is extremely sudden and wholly unsuspected. Pain varies greatly in its character and location. In intussusception of the jejunum or ileum it

is usually intense and unyielding; it comes in paroxysms as peristalsis forces the intussusceptum into the intussusceptens. It is usually in the lower central abdomen and may radiate.

The vomiting is persistent and the vomitus may or may not be stercoraceous. Sometimes the bowel may telescope for many inches and three or four days may elapse without fecal vomiting. Distension may or may not, be present. Central abdominal meteorism is helpful in diagnosis but cases are seen with flat abdomens as long as three days after the onset. Constipation is the rule, but the colon is free to empty itself and small fecal evacuations may occur after the onset of the intussusception. The observation that the colon receives a full-sized enema without difficulty is a point of practical diagnostic assistance. Careful examination of the alvine discharges usually reveals either microscopic blood or an intense occult blood reaction. Marked indicanuria is often observed. The leucocyte count may offer no important information. Roentgenograms afford valuable proof as to the location of the trouble.

Progressive rapid exhaustion, an offensive odor of the breath and a rising pulse rate herald the necessity of immediate surgical relief. It is useless to attempt the reduction of intussusception high up in the ileum or the jejunum by gaseous or fluid colonic injections. Frequently no palpable tumor with intussusception is detected even though the abdominal wall be thin. When, on the other hand, the ileum telescopes into the cæcum a tumor is usually discovered, even though the abdominal parietes be heavy.

In dealing with instances of internal hernia or volvulus it is extremely hard to make a pre-operative diagnosis and no time should be wasted in its attempt; it is enough to know that there is acute obstruction of the small bowel.

Much discussion and speculation as to the manner in which such an obstruction kills has appeared in medical literature. It seems most probable that some deadly toxic product is formed in the duodenum.

Acute obstruction at the ileo-cæcal region varies in its symptoms as with its cause. In children with intussusception in this region, bloody and mucous stools are common and a tumor may be discovered and there may be no passage of gas or feces after the initial emptying of the large bowel. Appendicitis with its pain, temperature and leucocytosis with incomplete obstruction, and what may be typical local manifestations, is not usually difficult to diagnose. The sudden development of obstruction in cases of tubercular appendicitis and peritonitis may come to operation without an exact diagnosis, but in chronic cases of exacting abdominal symptoms referable to a diseased appendix tuberculosis should be considered.

Regarding obstruction in the large intestine the most common forms met with are: 1, Car-

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cinoma; 2, cicatrices; 3, foreign body or fecal impaction; 4, bands causing constriction; 5, intussusception.

The diagnosis of these conditions rests largely upon the location of the disease. Usually carcinoma involves either the cæcal or sigmoid region, but may exist anywhere in the colon or rectum. The history of a case in the event of more or less positive obstruction is of value. An account of increasingly persistent and troublesome constipation is ordinarily obtained. Some cases recite previous periods of complete obstipation, pain and abdominal distension. It is commonly found that a regular resort to cathartics has been practised by a person whose bowels were previously regular. The statement that the stools were formed and of considerable size should not be regarded as a positive indication that no obstruction existed, as the consistence and form are determined in the rectum below an annular narrowing above. Nor is it safe to regard so-called pipe-stem stools as indicative of intestinal constriction; a tight sphincter is often the cause.

The symptoms of acute stoppage of the large intestine, which is most prominent, consists of its increasing gaseous distension which causes great abdominal bloating. If the constriction is in the sigmoid it is impossible for the patient to tolerate or retain more than a small enema, usually about a pint, the expulsion of which fails to lessen the tympanites. Pain is variable, at first it may be severe, but after great stretching and paralysis of the bowel walls has taken place, pain may be absent. Vomiting may or may not be troublesome; in some cases it is a minor symptom and occasionally several days elapses before the slightest stercoraceous character is noted.

When acute obstruction of the large intestine occurs in imprisoned hernia, internal or external, from intussusception or from any acute positive stoppage of an otherwise previously healthy bowel, the symptoms are apt to be more fulminating and severe and are considerably augmented or modified if peritonitis develops.

#### CHRONIC INTESTINAL STASIS.

The question of stasis in the gastro-intestinal tract should remind us that it is relative and depends largely upon the location its cause happens to occupy. Oesophageal obstruction is immediately symptom-producing. Considerable gastric retention is frequently tolerated without producing any symptoms whatever. Complete constriction of the duodenum, jejunum or ileum excites an immediate symptom response, whereas prolonged stasis in the lower bowel may fail to excite any.

Chronic stasis in one part, or in several parts, of the intestinal tract may be caused by:

1. Adhesions from localized peritonitis, due to gall bladder or gall-duct disease, pancreatic or retroperitoneal disease, appendicitis, diverti-

culitis, ulcers, carcinoma or pelvic disease, veils or membranes in the ileo-cæcal region, intestinal displacements, atony, pressure upon the intestine, hernia, cicatrices enteroliths, foreign bodies or fecal impaction and spasm, as in dynamic ileus.

Post-operation intestinal stasis may occur:

- (a) After extensive resections.
- (b) With the vicious circle.
- (c) In spreading peritonitis.
- (d) After ileo-sigmoidostomy.
- (e) From the development of kinks.
- (f) In cases of paralysis of the bowel.
- (g) After cautery resections from dense adhesions surrounding pockets of pus.

I wish to speak here of two conditions only: First, chronic stasis in the ileum from some etiologic factor located in the ileo-cæcal region; and second, chronic intestinal stasis dependent upon ptosis, atony or redundancy of the large bowel, commonly called constipation. Under normal conditions bismuth, or barium sulphate, is found to enter the cæcum at the end of six hours. This is shown by roentgenograms, and is true in cases presenting a six-hour gastric residue, as well as in those in which the stomach is empty at the expiration of that period. In all of the patients presenting this picture I have observed gastro-intestinal symptoms which sometimes include abdominal pain, nausea, vomiting and marked constipation. These symptoms may be periodic and last only a few hours, or they may persist for a long time.

Many toxic symptoms are present in some cases, such as headaches, general nervous depression and mental miseries, heavily coated tongue, offensive breath, capricious appetite, insomnia or bad dreams.

The cause of these and local symptoms lies partly in iliac stasis and partly in the chronic appendicitis or other pathologic state giving rise to interruption of the intestinal current.

This condition may, or may not, be associated with colonic ptosis. If it is the patient may suffer from the ill effects of both; but without this association the symptoms may be well-marked or even severe.

The onward movement of the contents will brook but slight interference in any part of the small intestine, and a few hours delay here is sufficient to excite toxic manifestations.

An incompetent ileo-cæcal valve should be mentioned in this connection as a contributory factor in symptom production. Ignoring a fine or close discussion of the exact nature of the toxin developed in the different segments of the intestinal tract contents which have once entered the colon have none but a harmful role to play if they again return to the small intestine. It is difficult to estimate the extent to which fecal return occurs in the ileum but there is good reason to regard a constipation thus accompanied as peculiarly toxic in nature.



In some of the pictures at the expiration of more than six hours the cæcum is seen still to contain little, if any, bismuth, while the terminal coils of the ileum apparently contain most of the mixture; the stomach and upper small bowel being comparatively empty. In these the delay suggests a kink and the plate is worthy of careful consideration. In the event of a repetition of these findings after several bismuth meals in the same case, and in the circumstance of associated local symptoms with the general effects of a toxic constipation, an operation in the lower right quadrant is indicated.

With regard to colonic ptosis it is the most common cause of intestinal stasis and constipation. The opinion is quite prevalent that constipation is harmless and negligible; may be easily cured by going to stool regularly and by psychotherapy. I admit these and other well-tried measures are useful, but there are many cases in which so-called cure has been accomplished when, in fact, the insufficient costive movements consist of feces which has remained in the colon for three or more days. The rectum may tardily and partly evacuate some of its contents once a day in so-called cured cases of constipation and yet colonic stasis be positive and detrimental all the time. Stasis in this region is much more common than in any other part of the intestinal tract. It is harmful and incompatible with good health. An intact condition of the intestinal epithelium constitutes an important factor of safety and thus many victims of marked constipation may resist its baneful effects for years, but these effects are so insidious and far-reaching that they are most difficult to estimate. In X-ray plates of my cases the colon in normal condition and position, with normal motor efficiency empties in from thirty-six to forty-eight hours after the administration of the bismuth meal, whereas in cases of ptosis of the transverse colon it is common to find bismuth present from the cæcum to the rectum in seventy-two or more hours. In some of these cases there is notable redundancy of the transverse and sigmoid portions and dilatation of the latter and the upper portion of the rectum is frequently observed. This short and very incomplete paper upon an enormous subject is merely for the purpose of introducing it for discussion by those eminently fitted to do so who will follow me.

In closing let me say, however, that viewed from the internist's standpoint the question: How does enteroptosis with its common accompaniment real and persistent chronic constipation, and its various complicating or etiologic pathologic conditions affect or deplete health? May be answered in part in this way:

First: By its toxic effects.

Second: By interfering with the splanchnic circulation.

Third: By exciting unhealthy conditions of the colonic mucosa.

Fourth: By its possible effect in causing appendicitis.

Fifth: By its possible effect in causing pelvic displacement.

Six: By its drag on the mesentery causing backache and misery.

Seventh: By its reflex upon the mind, the vasomotor circulation and the whole nervous system.

Eighth: By its induction of premature old age, because of its interference with the nutrition of the heart, arteries and body musculature.

It impairs the lasting power under mental, nervous or physical strain, and those in whom it is found in a marked degree nearly all exhibit decided underweight. While it is compatible with fair health and great activity, it predisposes to chronic disease and to inefficiency in life's contests.

In some cases it leads to, and perpetuates, chronic invalidism and neurasthenia and constitutes a sufficient menace to health to warrant surgical procedures for its possible correction or amelioration. The most serious colonic stasis I have ever seen followed ileo-sigmoidostomy, and I feel that surgery should not be resorted to until after thorough rest, supportive, gymnastic, mechanical, postural, dietetic and other modern medical treatment has been thoroughly tried and has proved a failure.

#### DISCUSSION ON PAPERS BY DRs. CHAMBERS, BETTMANN AND JONES.

DR. L. T. LE WALD, New York City:—I want to cite two or three opinions that have come to my attention very recently, one remark prefacing a paper by Dr. George D. Stewart, read before a meeting of the New York Surgical Society, in which he jokingly remarked that he was reading a paper on the *larynx* in order to get as far away as possible from the discussion on *intestinal stasis*. While Dr. Stewart was not serious, he showed how alive this subject is.

Dr. Moynihan has met the situation in a remark of this sort, that we cannot throw up our hands and say that we will not do anything for intestinal stasis. *We must meet the situation squarely*. There are cases that must be treated for intestinal stasis even though it involves a serious operation.

Dr. Case made a very rational statement when he said the pendulum is swinging back. I hope in this meeting we can stop the pendulum from swinging to the *other* end. We have gone through the appendicitis era and the fixing of movable kidneys. We remember when McBurney reached the limit of appendicitis operations, and we see today evidences of unnecessary re-

moval of the appendix. If ten per cent of the roentgenological examinations show that people should not have had their appendices removed without the cardinal symptoms of the disease, that does not prevent surgeons from operating on *proper* cases of appendicitis. I was with Dr. Edebohls when he was sewing up movable kidneys by the score, but that should not prevent us from sewing up *certain* kidneys when they are greatly displaced *and are causing symptoms*. There is a definite number of cases that should be operated upon. If you operate on a movable kidney *simply* because it is movable, you will not necessarily cure that particular patient. The trouble may be elsewhere.

I would like to show a few slides illustrating some of these points and give my own conclusions on this matter.

The examination must be complete. If you undertake a roentgenological examination of the gastro-intestinal tract, you must start at the mouth and finish at the anus and not inject the colon with bismuth alone and draw conclusions therefrom. I know of one case in which ileosigmoidostomy was performed, but the stomach was not examined at all, and while that operation worked very well and the patient was relieved of the intestinal trouble, X-ray examination of the *stomach* showed there was serious trouble there.

Here is an illustration of a case in which *one* X-ray plate is not sufficient to give you a clear idea of what has taken place. There are many people going around with ptosed conditions of the stomach without suffering symptoms of the disease, but it is foolish to do gastro-enterostomies on such cases. Is this stomach (referring to slide) which is in an abnormal position capable of performing its function properly? This particular stomach is not. At the end of six or seven hours the stomach has much residue, but that is hardly sufficient evidence alone. Give this patient another examination and let him have the benefit of medical treatment. After stomach lavage, in a case that had as much residue as this, with two or three weeks in bed, I have known the stomach to empty itself in three and one half hours. This stomach and the colon were elevated after the method of Dr. Coffey. The operation was successfully performed by Dr. John W. Draper, and the stomach remained elevated. This X-ray was made near the end of a year. Here is the colon *before* operation, and here it is after operation. I believe that the majority of these cases have a *congenital* element rather than an acquired one.

I would like to bring up the analogy of hernia, and, by the way, this problem of congenital and acquired hernia will be a serious one as soon as the compensation laws go into effect. We believe the tendency to hernia may be present in a

large number of cases and develop from slight injuries.

Here is the case of a woman and her daughter who both had stomach symptoms. I did not think the daughter would show such a residue, but she has almost as much as that of the mother. Here is the colon of the mother and here the colon of the daughter. It functionated better in the daughter than in the mother.

Here is a similar condition in two brothers, anomalies of the cecum, both enormously dilated and low. In one of the brothers the cecum emptied very well. In the other brother it did not empty anywhere near as well.

I have examined a great many children and infants and I find peculiar conditions of the colon. Abnormal length is apt to be present from birth, and I do *not* believe that *most* children outgrow this condition.

This child has had considerable constipation. She had a fecolith in the lower part of the sigmoid. It could be palpated, and was thought to be a movable kidney.

Here is the sigmoid in this girl of thirteen. Here is the enterolith and the sigmoid makes an enormous loop away over to the right.

Here is an extreme case of variation of the colon. The colon is abnormal in length and position and does not functionate properly.

Here is a case in which the whole colon failed to rotate. The cecum is way over to the *left*, and the whole colon is on the *left* side; nevertheless, that patient has no intestinal stasis.

Here is a pathological and enormously dilated cecum. In this case there is actual reversal of peristalsis, which causes extreme dilatation, and the patient has marked symptoms. Gynecologists examined this patient and said she had an ovarian cyst, a simple error if we had not the X-ray plate to go by. An X-ray examination should be made *first* in those cases in which there is any question about the diagnosis. If you cannot have an X-ray examination, you must go through all other tests.

Here is an extreme condition of diverticulosis of the colon in which the diverticuli extend way back to the cecum.

Here is a case of obstruction in the ileum. The X-ray plate shows the obstruction was not in the large gut, for the injection material traveled all the way around to the cecum. We gave that patient a meal from above and the obstruction was located in the ileum, due to the formation of bands from chronic appendicitis.

Here is another case of obstruction of the ileum. These are the kind of cases I have seen and only in these have I advised operation. This was due to a hernia which was operated on and dense adhesions followed.

The only other problem I wish to bring to your attention is the very anomalous condition of the sigmoid at times. The sigmoid may go higher than the transverse colon.

Here is a case in which a patient had constipation and cæcosigmoidostomy was performed. The girl for a while did improve, but later on she had most extreme constipation and the Roentgen examination proved why. She had as *vicious a circle in the colon* as you can see in the stomach after gastro-enterostomy. The meal came down to the cecum. Then it came up the ascending colon instead of going down to the sigmoid. In seventy-two hours you could demonstrate that it passed through the opening and went around the circle again.

If an operation is to be performed in such cases, *resection* of the colon should be done if there is a long sigmoid; resection in the continuity of the bowel, and end-to-end anastomosis made, or the operation of Drs. Lynch and Draper. This is one of their cases. Here is the colon before operation, with a large dilated cecum, and the hepatic flexure is long. They removed the *proximal* half of the colon, and implanted the ileum in the place I show you, with a beautiful result. The patient was entirely relieved of the tendency to intestinal stasis.

DR. ROBERT T. MORRIS, New York City:—  
First, with reference to the paper of Dr. Jones, there are five points I want to make briefly.

Point 1. The poisonous contents of the bowel in cases of intussusception, are they there before the intussusception or subsequently only? If we touch a rabbit's bowel with a bit of carbonate of sodium the bowel goes into a state of spasm, followed by intussusception. Do some of the toxins which exist in the bowel act in the same way?

Point 2. If we flush out the poisonous contents in cases in which we have an obstruction for some time, and get at the point quickly, we may introduce salt solution through a large needle and flush the entire area that is filled with the poisonous content.

Point 3. Post-operative obstruction in many of these cases is relieved very promptly if we give an intravenous injection of pituitrin. Sometimes we may have to stimulate the ganglia of the bowel wall.

Dr. Jones left out an important point, and that is hypothyroidism. Do not forget that.

Point 4. Bad taste in the mouth is not always connected with intestinal disturbance. I believe it is caused by anything which causes neuralgia of the gustatory nerve.

Point 5. Dr. Jones says there is altogether too much surgery being done; that most of these patients suffering from chronic intestinal stasis are amenable to medical treatment. He is quite

right. There is too much surgery, but also too little surgery. Half of these patients get into the hands of men who want to "give them something," and that kind of doctor is hopeless. If we got these cases early very little surgery would be required.

Another point: Dr. Bettmann described a group of cases with hereditary defects, patients who are suffering from grandfatheritis.

Dr. Bettmann's paper is like the moon, very bright and brilliant on one side, and very dark on the other. One may arrive at a right conclusion from bad premises if his logic is faulty enough, but Dr. Bettmann arrives at faulty conclusions from brilliant premises. He is almost Nietzsche-like in that respect.

Dr. Bettmann spoke of colonic mythology. We have in New York a fakir who claims to cure by flushing most of the things that are cured by colonic surgery, and the joke of it is he does, temporarily at least. He eliminates the colonic toxic factor. If we want any more facts than that upon which to reason from cause to effect, I do not know where we are going to look for them. If we remove the colonic toxins by flushing or any other method, and if the patient is immediately better, what is the use in working out an elaborate syllogism? We know that patients make extensive trips to Europe for conditions which are purely surgical. Many a patient has spent \$50,000 in trips to Europe when he might have been relieved for \$40,000, allowing him to economize \$10,000.

Lastly, I would ask Dr. Bettmann what he has to say with reference to a report from his fellow-townsmen (Dr. Reed) of the relief of epilepsy in cases that have been operated for intestinal stasis?

DR. JAMES T. CASE, Battle Creek, Mich.:  
There are several points to which I would like to call special attention. I would like to illustrate these points by lantern slides, but the shortness of time allowed each discussant will prohibit my covering the ground if I attempt to show the slides. In my section of the X-ray exhibit will be found illustrations of all the points I wish to bring to your attention.

First, I want to speak of the question of prolapsus. I note with pleasure the tendency everywhere noticeable to discount the importance of prolapsus of the stomach and bowel, as a factor in the production of stasis. The terms prolapsus and stasis are by no means synonymous. Neither are the terms intestinal stasis and intestinal toxemia by any means synonymous. In spite of very marked intestinal stasis, a patient's constitutional defenses may enable him to take care of the products of intestinal stasis, and he may be symptomless. On the other hand, a patient with only slight intestinal stasis may suffer extreme toxicity.

My experience in the roentgen examination of some five or six thousand cases, a considerable number of these patients later going to operation, has convinced me that the question of morphology and position is of relatively small importance, the question of function being paramount. Colonic stasis does not occur in the transverse colon, but in the cecum and ascending colon, and in the pelvic colon. That this is true is supported by the fact that carcinoma of the colon is most frequent in the pelvic colon and in the cecum. Carcinoma of the transverse colon is extremely rare, and if the transverse colon were a common seat of stasis, we would expect the much more frequent occurrence of carcinoma in this portion of the bowel.

Obstruction is not commonly caused by angulation at the flexures. I have very rarely seen obstruction at the splenic flexure. Obstruction does occasionally occur at the hepatic flexure, due to the constricting upper fibres of a Jackson's parieto-colic membrane or to adhesions extending from the gall bladder. Obstruction from these adhesions, however, is not common.

The stasis in the right half of the bowel, which is interpreted by many as being due to kinking at the hepatic flexure, is in reality due to an entirely different cause, viz., exaggerated antiperistalsis. Antiperistalsis occurs in the proximal colon beginning in the transverse colon, just beyond the hepatic flexure. Under conditions of obstruction in the distal colon, whether organic or spastic, this antiperistaltic influence is increased. As a result, in cases of colitis affecting particularly the iliac and pelvic colon, we find a marked spasticity with narrowing of the lumen of the bowel in the left half, and a corresponding dilatation of the cecum and ascending colon with stasis in the cecum and ascending colon. The writer is convinced that in the majority of cases of stasis in the proximal colon, the cause is not located at the hepatic flexure, but in the distal colon; and the stasis is due, as above suggested, to increased antiperistaltic influences.

That sharp flexures do not afford a serious hindrance to onward peristalsis is suggested by the following observation: You have all observed that the colon shadow is ordinarily serrated, the serrations being due to the contractions of the haustra coli. These haustra offer a serious impediment to the sudden onward propulsion of colonic contents. It will be remembered that the principal onward propulsive activity of the colon is a mass movement first described by Holzknecht in 1909. During this mass movement the haustral markings of a certain segment of bowel content disappear and the outline of this bowel mass becomes perfectly smooth and sausage shaped. A ring contraction proximal to this sausage-shaped mass moves it suddenly into the distal colon at about twice the rate of peristaltic waves in the stomach. Picture a so-called prolapsed colon, the cecum and transverse colon

reaching well toward the pubic bone, with the flexures in their normal high position, certainly just such a case as would present a hindrance at the flexures, if sharp angulation were really a cause of obstruction. Yet in scores of such cases, with the patient standing erect, the writer has seen the occurrence of these mass movements, a large segment of the content of the ascending colon being suddenly formed into this sausage-shaped mass and traveling rapidly around the "sharp" hepatic flexure, down into the prolapsed transverse colon and up the long stretch of twelve or fifteen inches to the splenic flexure, around its "sharp" angulation and down into the descending colon, without the slightest suggestion of any hindrance having been offered at either "sharp" turn. It does seem that a study of the function of the bowel is of much greater importance than a study of its morphology or position.

I have noted with interest the remarks by Dr. Chambers on ileo-cecal valve incompetency. Dr. Bettmann stated that ileo-cecal valve incompetency had been observed in normal as well as pathological individuals. I would like to take exception to his use of the word *normal*, and suggest the use of the word *symptomless*, instead of normal. I quite agree that many individuals who are apparently free from symptoms of individual toxemia do show incompetency of the ileo-cecal valve. This does not by any means prove, however, that ileo-cecal valve incompetency occurs in normal individuals. In the light of our knowledge concerning the production of stasis in the right half of the bowel—through obstruction, either spastic or organic in the left half, with increased antiperistalsis and dilatation and stasis in the right half of the colon, it seems perfectly reasonable that if the one-way ileo-cecal valve be incompetent, the result will be a backing up of material from the cecum into the small bowel, or at least slowing of the stream from the small bowel into the cecum. Of course, ileal stasis due to this cause is a secondary affair, and its importance should be considered only secondary. Nevertheless, it has been found feasible to restore the competency of the ileo-cecal valve (Kellogg's method) during abdominal section for other causes, and in the post-operative examination of such cases (more than 150) the writer has found the ileal stasis very much diminished or entirely eliminated in the great majority of instances.

DR. JEROME M. LYNCH, New York City: The impression created by Dr. Bettmann's paper is rather unfortunate because it is this attitude which has forced so many patients to seek relief in Europe. One has only to visit any of the great gastro-intestinal clinics of Europe, such as that of Professor Combe, in Lausanne, to be convinced of the truth of this statement. The very development of the material resources of

such clinics and the business success of the enterprise attest to the truth of the hypothesis that the patients are really suffering from a definite ailment. The great number of invalids who flock there yearly shows that there is something real and tangible in the treatment. Dr. Satterlee, Dr. Draper and the speaker spent some time last year in the wards with Professor Combe and we were convinced, not alone of the value of his treatment, but also of the fact that he is one of the ablest clinicians in Europe. The habitual tendency among physicians, all too common here, to classify as "neurasthenic" patients whose ailments are difficult to fathom is most unfortunate.

There is such a condition as auto-intoxication, although with increasing knowledge the name may be modified. The important question is the assignment of the patient to the proper form of treatment, medical or surgical. Selection must be based upon diagnosis. We must not take for granted that because there is an X-ray stasis at the terminal ileum that it is due to bands or other obstructive phenomena. We know from our experimental work that such a stasis may be due to a number of causes, first and foremost, incoordination of the various mechanisms which control the region. Increased inhibition of the ileac segment, recently referred to in a paper on the surgical physiology of the colon by Dr. Draper and myself, and to be published in the *Annals of Surgery* for October next, undoubtedly constitutes an important secondary factor. These are functional variants.

Morphologically we have to consider the mechanical obstructions and the obstructions due to a loss by inflammation of the myenteric plexus. Dr. Draper and I, without definite basis for support, have believed that many of these inflammatory conditions of the ceco-colon have their origin in the appendix. If true, one can see what far-reaching benefits accrue to patients in whom the appendix is removed at the first onset of symptoms.

Bloodgood noticed an immediate restoration of function after resection in cancer of the colon, whereas there was great delay in restoration in cases where resection had been done because of inflammations and contractions. Therefore it is most important to distinguish between the functional, mechanical and inflammatory types. It is impossible to do this by the X-ray alone and nothing is to be more deplored than a too great dependence upon this useful aid to diagnosis. Unquestionably many patients are operated on simply upon the word of the X-ray operator. Final diagnosis can be made only by the trained diagnostician and one used to handling this type of case.

Treatment is surgical and medical.

We have had excellent results in very carefully selected cases from the operation of developmental reconstruction of the colon, de-

scribed in the *Annals of Surgery* for last February. On the other hand, we have seen brilliant results following Satterlee's medical treatment.

One must look at this matter from an open-minded, pragmatic standpoint. Let us try to see what we can do for the patients, rather than spend valuable time in unnecessary discussions. Let us be synthetic rather than analytic. A temperate optimism is necessary to the development of this intricate problem.

DR. A. L. SORESI, New York City, spoke of intestinal adhesions following operations in dogs. He reported no omental adhesions following experimental handling in twenty-eight cases, and gauze handling in twenty. The injection of irritating substances, including infectious materials, caused marked adhesions. Rubbing with iodine caused adhesions. The injection into the abdominal cavity of 160 c.c. of water caused enormous adhesions in eighteen dogs and slight adhesions in five.

As to the injection of petroleum or olive oil to prevent adhesions, if these were injected into the abdomen in large quantities the animals died within three weeks, and the intestine formed such a mass that it was hard to unravel it. Surgeons cause adhesions around the colon, duodenum, gall bladder and appendix by their hands, retractors, and so forth. When retractors are used for a long time to spread the wound open, in removing the appendix trauma and infection are produced. These are two elements that cause adhesions.

DR. HENRY W. BETTMANN, Cincinnati (closing):

Dr. Case's remarks to the effect that what Glenard took to be a collapse of the distal portion of the bowel is really a spasm are very illuminating. Nobody followed Glenard in his view that the real and chief cause of visceroposis was a blockade of one part. Glenard thought there was collapse through emptiness of the distal part, and because the distal part was collapsed the pressure support of the upper abdominal viscera was no longer present, and, therefore, the abdominal viscera dropped.

As to his remarks about incompetence of the ileocecal valve and the reflow of material from the cecum into the ileum which occurred in certain individuals, in my paper I spoke of these individuals as being normal, and we do see in a certain number of normal individuals a reflow of material from the cecum into the ileum. Dr. Jones wishes to amend that statement declaring that these patients are not normal, but up to the time of operation are symptomless. I do not think that we should quibble over the two words. We are all willing to call patients who have no symptoms at the time of our observation normal individuals.

## FRACTURES IN THE VICINITY OF JOINTS.\*

By C. E. CALDWELL,

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**I**N the literature of the past few years, what may seem undue prominence has been accorded to the subject of fractures. This is attributable to the fact that the more accurate knowledge of anatomical conditions obtained through the new general use of the X-ray has made us emulative of ideals which do not fall short of actual *redressement* of the broken bones.

How far we are justified in the zeal which seems to have taken such hold of us, the calm judgment of the future must decide. The old axiom of our forebears, *nil nisi bonum*, seems to be translated *nil nisi bone-plate-em* by enthusiasts of the open method.

We discard an anæsthetic when it proves to possess too great an element of risk. Are we ready to discard a surgical procedure for the same reason?

The first consideration in approaching any fracture is a diagnosis as accurate as the condition of the patient and the facilities at our command will permit.

One of the most valuable contributions which the X-ray has made to the surgery of fractures is that by the careful and intelligent study of a large series of plates, made on cases which have been previously clinically examined and diagnosed, we are enabled to arrive inductively at fairly accurate estimates of the character and extent of the injury, in cases where the X-ray is not available.

To one doing fracture work, the X-ray laboratory would stand in the same relation as the autopsy room to the clinician, to clear up and corroborate or refute diagnosis made at the bedside.

Used in this way it will prove of inestimable benefit to those who may be called on to treat fractures without this valuable aid.

My students are taught to carefully establish their diagnosis, and then are drilled in the interpretation of the plates. At the same time their attention is directed to the recurrence of certain types of injury resulting from certain kinds of traumatizing forces.

The architecture of bones remaining constant, it follows that force exerted in a given direction upon a given point, and with a relatively equal amount of violence, will produce a given type of fracture.

It is the degree of accuracy with which we are enabled to estimate all these factors, which determines the possibility of a fairly accurate diagnosis.

It goes without saying that I am not leaving

out of account the usual methods of careful physical examination.

It is, however, to certain types of fractures in the vicinity of joints, to which I wish particularly to invite attention. Fractures in the close proximity of joints are of greater gravity than those occurring more remotely, for the reason that they are likely to jeopardize the mobility of the contiguous joint.

By the same token they must, of course, present more difficult problems in their management. The short arm of the lever as Sherman has so aptly remarked, must be considered in connection with the lever on the opposite side of the joint, for it is that which carries it with it when the limb is flexed or extended.

The double mobility, that of the joint and that of the short fragment, is what makes adjustment so difficult.

At the shoulder the short fragment moves with the scapula, at the elbow the short fragment of the humerus with the forearm.

At the shoulder, fractures and fracture dislocations of the head of the humerus, either through the anatomical neck or including the tuberosities, will be considered, as they are within the scope of this paper.

As I have endeavored to show on another occasion, dislocation of the head of the humerus, associated with fracture, falls into two categories, dependent upon whether the fracture includes the greater tuberosity or not.

If the head is dislocated into the axilla, simultaneously with fracture of the anatomical neck, without involvement of the tuberosity, such a head may with good luck, under complete anæsthesia, be pushed back into place, with questionable results, however, so far as union and free motion of the joint is concerned.

It is, at any rate, out of the way of doing damage to the axillary vessels or brachial plexus.

In one such case, I remember, failure to reduce the head led to operative interference, and the axillary artery was found spanned over the head so tightly that it was greatly dilated on its proximal side, and must eventually have led to erosion or aneurism.

In fracture dislocation, where the greater tuberosity is included in the line of fracture, it will not infrequently be found that the head is completely turned about, with its articular surface facing upward and outward. In such a case it will be seen that the supra-spinatus and infra-spinatus tendons have not been avulsed from their attachment, and have, by their contraction, been active in causing this rotation of the head. Attempts at reduction of the head under such circumstances will prove futile. Open operation will be indicated.

Even though, upon operation, it be found possible to reduce the head, this will be useless unless some means can be found of securing it to the shaft. I shall have to take the word of those who get freely movable joints even then. It is

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 28, 1915.

easy to persuade oneself of more mobility in the shoulder than really exists, with a mobile scapula to help out.

My own experience, and I can only speak from that, leads me to believe that we stand a better chance of mobility with the head removed. As to stability, that is another matter.

One thing to which especial attention should be called is the menace to mobility resulting from leaving semi-detached strips of periosteum, which may, by the formation of spurs or bridges of bone, materially effect mobility later on.

If conditions permit as to hæmostasis, and vitality of the tissues, an effort may be made to cover the end of the shaft with a fat fascia flap, if one is available, which is not always the case.

An impacted fracture, such as I show in one of my slides, may cause very little apparent disability, but if unrecognized, may lead to distressing complications for both patient and surgeon.

Although I have seen a number of avulsions of the greater tuberosity of the humerus, and they may occur from apparently trivial causes, such as missing one's footing in the dark, and suddenly bracing against a door-lintel for support, in none of them has displacement been sufficient to warrant interference, and the results have been invariably satisfactory.

I should not think of interfering in fracture of the margin of the scaphoid fossa of the scapula, unless the fragment should cause trouble.

The best approach to the shoulder joint where free exposure is desired, is through a long incision, following the interval between the clavicular origin of the pectoralis m., and the deltoid. The cephalic vein and branches of the acromioclavicular can be held aside or divided. This permits of easy dislocation of the distal end of the humerus through the wound, and the fastening of the head to the shaft; after which reduction is completed. In old cases where the head lies in the axilla, and in all likelihood must be removed, an exposure through the axillary space will prove much safer, as the adherent vessels and nerves can, in that way, be more readily spared.

As before mentioned, I am persuaded that, in the majority of these cases, removal of the head is preferable to attaching the head by any method as yet devised. Dowelling is out of the question, except in fractures of the surgical neck, and there it is rarely necessary. Plating is impossible, and the insertion of a screw will, in cases where the head is a mere concavo-convex lens of bone, result in fracture; especially if we attempt to counter-sink, as we are advised to do.

After all, what we are striving for is a useful arm, and that I am persuaded will depend rather upon how little harm we have done, rather on how much good we have attempted to do.

I know of one case, a motor-cyclist, who now has a perfectly useful arm. This, in spite of the fact that he, in his violent efforts to mobilize his joint after I had as I thought secured and re-

duced a dislocated head, redislocated the head from the shaft.

It was only through a skiagram taken with the object of showing the excellence of my results, that this condition was revealed. He has had no trouble, and is actively engaged as a motor-cycle policeman.

In fractures about the elbow joint, those occurring in the lower end of the humerus are of primary interest. The difference in prognosis in those occurring in children and in adults is too well known to need emphasis. That this difference is due altogether to the great frequency of epiphysal separations which, by the interposition of cartilage prevent direct invasion of the joint, I am not prepared to admit. I think the frequency of epiphysal separations relatively speaking, has been greatly exaggerated.

Falls upon the elbow in children will oftener result in fractures above the epiphysal line, will often be greatly comminuted, and will often fracture through one or both condyles, and yet the results are almost invariably good.

Young and growing bones certainly have a way of shaping up that older bones lack.

In only one case have I found it necessary to operate in fracture at the elbow in a child. Gunstock deformity is a rarity since treatment by extreme flexion has been the rule. Great upward and backward obliquity of the lower fragment is a contra-indication to treatment by extreme flexion, as it is apt to cause too much tilting backward of the lower fragment.

Where there is great comminution and displacement of the fragments which, under anæsthesia, cannot be moulded into shape, it will be advisable to open the joint on the side of the extensor tendon on which the most grossly offending fragments lie, and by means of gut, kangaroo tendon, or suitable plates, to bring the fragments into juxtaposition. Failing that, it is well to remove the most recalcitrant fragments.

Not all fractures of the olecranon will require plating. Many, by reason of the strong expanding fascia of the triceps, are readily approximated by treatment in extension and proper bandaging.

If the patient has a laborious occupation, which calls the triceps into play, or is a tennis player and wants to preserve his back-hand stroke, I should resort to fixation, preferably by means of a nail or a small steel plate, which latter can readily be removed if necessary at any time, under local anæsthesia.

Fractures of the neck of the radius may show but little displacement, if treated with the forearm in flexion and semi-pronation, so as to relax both biceps and pronator radii teres.

If the skiagram still shows much displacement the radius should be exposed and plated.

The consideration of Colles' fracture is omitted for obvious reasons. I show a fracture of both radius and ulna just above the wrist in a boy of eight, which is unusual.

The now usually recognized fracture of the scaphoid is best treated in full extension of the wrist.

My experience with many fractures about the hip-joint has not converted me to belief in the desirability of resorting to open operation, except in very favorable cases.

My cases of intra-capsular fracture have been with very few exceptions, one of which was a child of five, in elderly people, and very often, in the majority of cases elderly women.

In many of these very tolerable results, and in a few very excellent results, have been obtained by the so-called Whitman method, which I have used for the past twenty years.

I have never yet deemed it advisable to break up an impaction of the neck of the femur when present, nor should I venture to attempt, by the use of a mallet, to produce it, as Cotton reports having done.

It seems to me, with all due respect to its distinguished advocate, a method too uncertain in its results, and too fraught with possibilities of harm to commend itself to my favor. Like many another method, it may have its justification in the results obtained by its author and yet may, in other and conceivably less skillful hands, be productive of much harm.

Where interference is necessary, I much prefer to see what I am doing, and should elect the steel pin or bone dowel, as recommended by Albee.

By resorting to the abduction method the obliquity of the neck is preserved, when the extremity is brought back into line with its fellow, as is the case when a sub-trochanteric osteotomy is done for coxa vara. By Cotton's method it would seem that a traumatic coxa vara would be induced.

In a young person, where impaction is associated with too great eversion, the impaction should be broken up, and the hip treated by the Whitman method, or by transfixion.

In fracture at the lower end of the femur above the condyles the control of the distal fragment is often a matter of great difficulty. There is no doubt but that the treatment by acute flexion of the leg upon the thigh has much to recommend it, in so far as the position of the lower fragment is concerned. Backward tilting by the relaxation of the tendons of origin of the gastrocnemius, is overcome, but the position is irksome to maintain, and may cause severe circulatory disturbances.

Steinman's nails have been effectively used, but from what I have seen, do not commend themselves to my favor.

The double incline plane with traction both in the long axis of the femur and the tibia, seems to give very satisfactory results. When T fracture with great displacement of the condyles exists, open operation fixation of the fragments by the most available method is indicated.

In fracture of the patella we are all in accord

as to the necessity of the open operation, in all but non-operative risks. The method is one of individual choice. My own is wiring, except in comminuted cases, where I have used a combination of wiring and the Stimson method.

I have seen a few fractures of the tibial spine, and do not recall that there was any marked subsequent disability.

I have seen one avulsion of the tibial tuberosity complicated with severe infection and periostitis of the tibia. The patient recovered with good union and perfect function.

Fractures through the tibial condyles may be accompanied by great displacements, thus altering the weight-bearing surface of the condyles. Nailing will prove of use in restoring their proper relation, and may be done without jeopardizing the joint.

Fracture through the cancellous tissue of the head of the tibia may show little or no displacement, owing to the fascial expansions and the bracing action of the fibula.

I show in my collection one such case, where the diagnosis was made from a line of extreme tenderness across the bone (pencil-tenderness.)

Fractures at the ankle, especially those involving the lower end of the tibia, should be adjusted with the precaution to avoid a pronated foot. Often a position of forced supination is advisable, with the foot always at right angle with the leg.

Fractures of the astragalus are often overlooked. An after complication of many of these fractures about joints is a myositis ossificans, which not infrequently will account for many otherwise unaccountable disabilities.

#### AVAILABLE FIELDS FOR RESEARCH AND PREVENTION IN MENTAL DEFICIENCY.\*

By MAX G. SCHLAPP, M.D.,

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THE gravity of the problem of mental deficiency has always been recognized; but only lately has there been any well grounded hope that it might ever be partially, if not entirely, eliminated from society. Today, at least, many people are awake to the realization of the public responsibility for the public provision for, and public prevention of, feeble-mindedness. But nowhere has there yet been a strong, vigorous enough campaign to ensure the assumption of this public responsibility. To be sure, Pennsylvania, New Jersey, New Hampshire, Delaware, New York, and recently Utah and Arizona, have had commissions appointed to inquire into the matter. The results of these investigations have been unanimous in finding no adequate program for the detention and protection of those unfortunate members of

\* Read at National Conference of Charities and Correction, at Baltimore, Md., June, 1915.



society, who fall so far short of the line of normal mentality as to be an inherent social menace.

Conditions found by the New York Commission are typical, and I quote these figures here merely as illustrative of the situation all over the country. In our recent State census of the feeble-minded there were found 6,075 in State and City institutions, and 1,565 more being given the more haphazard, irregular care of county almshouses. Beside these there were found 19,698 cases definitely diagnosed as defective, at liberty in the community. And these 19,000 represent but a small percentage of those mentally deficient who are left without public restraint or even public recognition. It is from this group that vice, crime and degeneracy draw such a large number of recruits; it is among this group that there flourishes the real peril to the mental and moral stamina of our nation.

These facts have long been known, but their determination has as yet brought about but little improvement. Patients receiving institutional care are, everywhere, but a small portion of those who stand in urgent need of it for the sake of their own happiness and the safety of the community. And even those who have been committed are there because of some serious crisis that has already occurred in their own lives, or because of the dire poverty of their guardians. There is no scientific method of selection used, and the motive for segregation seems rather to be the ridding the community of an individual than the sympathetic elimination of the nuisance itself. The few attempts, notably in Massachusetts, Ohio and Washington, to detect and provide for the feeble-minded on a basis of scientific diagnosis, have been significant as experiments, but can in no way be regarded as leading to any complete solution of the problem.

One reason why this matter has never been taken up on a comprehensive scale by our legislatures, is because it has never been conceived in an adequate fashion by our scientists and social experts. This lack of adequate conception is due to the failure to regard the whole question of mental defect as a great field for experiment and as a great laboratory in which may be analyzed the causes of social inferiority. We must give imagination full rein; and give the broadest scope to the dogged, persistent spirit of scientific research. Our ultimate goal must be the adequate and sympathetic provision for the care of all the feeble-minded, and the discovery of, and protection against all the etiological factors causing feeble-mindedness. Only by working on in the faith that that goal will yet be achieved, can we really come before the public and ask their support in our effort to conserve the mental virility and moral integrity of the race.

Every branch of social endeavor, that in any way comes in contact with the mentally defective, is an available field for research and prevention of mental defectiveness. Not only is this so be-

cause of the incompleteness of each of these branches, but also because of the incoherence and non-co-ordination of them all. It shall be my hope in this paper to indicate what these fields of research are and, further, how they must all be combined into one great comprehensive plan of work that will make for efficiency and success.

At present the first net spread for the detection of the feeble-minded child is the public school. Here—at least in our large cities—the suspiciously dull child is supposed to be given a thorough mental examination, and if found defective, is placed in a special ungraded class. Here an attempt is made, though very largely limited by poor financial support and vocational facilities, to give him that manual skill and technical training that will fit him for a community life. As a matter of fact the majority of these special class pupils leave school as soon as the law permits, totally unprepared to become peaceful and useful citizens. They swell the number of the criminals and ne'er-do-wells; the inebriates and paupers. Only too often they live on—a financial burden and a social menace to the community which tried to educate them. There can be little doubt that the training now given in the special classes is superior to that that could be given the feeble-minded in the ordinary grades, but, on the other hand, no one can affirm that it in any way measures up to the responsibilities it has undertaken. As in the institutions, the children that are given the mental examination are selected mainly because they have proved troublesome to the teacher, or an immoral influence over the other pupils. There is no adequate machinery for diagnosing the mental status of all children who show defective tendencies, or for the correct classification and resultant care of those found actually to be defective. Thus we know that in New York City there are ungraded classes with pupils ranging from hopeless idiocy to the state of slight mental retardation. In one room the commission found a child but one year below the Binet scale normal, and another who fell ten years behind that standard. Yet there is no method—in practice, at least—of giving these children the special and individual attention for which their special condition calls. So tremendous is this problem in the educational system of our large cities, that the mental examination can be little other than the application of a few overcodified tests, without any comprehensive prognosis for medical treatment or social supervision. It perhaps succeeds in the rating of the retardation of these subnormal pupils, but it does not in the least reveal or even indicate the cause for that retardation. Nor can it accurately differentiate the child whose retardation simulates mental deficiency from the actually feeble-minded.

And still, this special ungraded class system does protect many defective children five hours a day, five days a week, forty weeks a year, and eleven years of their lives. This, although very

expensive, is doubtless a true economy to the State in the long run. But it is only a small part of the necessary training of the subnormal. For during the stressful periods of adolescence and early manhood, these defective children are left almost entirely to their own resources and to the supervision only of their well intentioned and ignorant parents and associates. The result of this neglect can be seen everywhere in our courts, prisons and charitable institutions.

Of course, the low grade types of defectives are easily recognized, and some are segregated in custodial asylums. Here again an effort is made to give an industrial training that will make the inmates useful and contented citizens of these limited communities. Most of our institutions are beautifully situated in the country, and with the development of the farm colony plan, much is being done to make the patients self-supporting and industrious. Yet in all our States, these colonies reach but a handful; the rest roam at large, continually getting into trouble. Our almshouses are forced to give temporary shelter to the feeble-minded pregnant woman who is naturally unmoral. Our reformatories are filled with many who can in no way be held responsible for the derelictions that brought them there, nor be in the least benefitted by the treatment there received. Our prisons are crowded with repeated offenders against the law who have not the mental stamina to resist the temptations that everywhere beset them.

Many of our institutions and courts are commencing to give mental examinations to these prisoners. But even the most careful diagnosis is of little use since we have not provided any place for the permanent segregation for the defective delinquents. Meanwhile the tragic farce of trial, imprisonment, and discharge goes on without abatement, and the net result can only be the further degeneration of those who are mentally helpless before the degeneracy to which a neglectful community has left them. Let me cite an instance here of the fallacy of our present system of so-called care.

Girls arraigned in New York for prostitution, are sent to the reformatories at Hudson and Bedford. Under a law only recently enforced, the boards of managers of these institutions are enjoined from receiving as inmates those who are mentally incapable of benefitting from the discipline and training there given. Feeble-minded girls must be returned to the sheriff of the County from which commitment took place, and he has no alternative than to return them to the life of the streets. And so the weary round goes on. The enforcement of this law negatives the serious work attempted by the Rockefeller Foundation at Bedford, and practically sets back any attempt to study these cases from either the personal or the casual point of view. Of course, the intent of the law is to enforce the State to care for this class of defective delinquents in special colonies. But there

seems little prospect of securing such colonies in the near future, and, even when secured, but little hope that they will accomplish more than provide for the segregation of another handful of those in need of custodial care.

For even in the institutions at present existent, there is no serious study possible of individual cases or of fundamental causes. In only one asylum in New York State is there even a pretence of any research work, and here the effort is largely negated by the lack of adequate financial support for a competent staff or a complete laboratory equipment. Surely public institutions specially designed for the care of the mentally defective form the most available field for study into the etiology of mental deficiency. They should be attractive for the highest type of medical, psychological, and social research student. All modern experimental appliances should be available and no expense should be considered too great in the achievement of success. The result of such research may be of the greatest economic benefit to the State as well as of inestimable social value to the people.

Heretofore we have been satisfied with noting those in the community who are seriously retarded in mental development, and of tracing the relationship between that condition and its social symptoms, such as crime, vice, and dependency. We are just now beginning the far more important task of inquiring into the causes for such retardation and the possibility of its ultimate eradication. Nor is this just a matter of perfecting any system of mental examination or of developing any scheme of supervisory care, the problem of feeble-mindedness has been held back many years in this country by the bitter bickering and petty partisanship between the supporters of various theories of treatment. Important as details are, they must always be kept subordinate to the greater problem of research and prevention. If we be sincere at all in our desire to serve the community, we must overcome all lines of partisan prejudice, and unite in a determined and comprehensive attack on the etiological and social factors which cause the suffering. All our energy must be directed, all our machinery must be designed toward this co-ordinated effort. Schools, clearing houses, institutions, and probationary colonies are all a necessary part of social protection, and must join hands in the great task of social inquiry. Teachers, social workers and physicians must all work side by side in the great field of social prevention. There is every reason to feel hopeful that we may go far in our search for a solution of this problem if only we will work honestly and disinterestedly.

To make success more feasible, I have long agitated the establishment of State psychopathic clinics, where all cases suspected of mental defect might be observed, diagnosed and permanently registered. Such clinics would be the focus point for original research on which would be

trained all the energy of those most vitally interested in the elimination of mental deficiency. Cases of doubtful mentality would be referred to these clinics from all social agencies, public and private, that come in contact in any way with the community. There would be no need to wait until a retarded child was of school age for a thorough examination. Through an arrangement, preferably enforceable by statute, all physicians and nurses would be forced to register for examination all children who in their earliest years showed signs of marked developmental retardation. Very often infants will show symptoms of a condition that but simulates feeble-mindedness, and can be cured or at least mitigated if given the proper attention at the right time. Thus, it is to be seen that some may be saved who otherwise would be condemned to the life of a mental defective. Very often also, they will be readily recognized as incurably defective, and of such a low grade of mentality as to be utterly unadaptable to community life. These wholly uneducatables would at once be segregated, thus saving the enormous loss of energy and money now consumed in the extravagant and fruitless efforts to provide for them in the public schools.

The creation of such clinics would permit of a continued observation of, and supervision over high grade cases that might, with proper care, be made socially useful in the community. Such supervision and observation should continue, in so far as practicable throughout life, but on the other hand it should be of so sympathetic and informal a nature as never to hamper or embarrass the patient who is being given his "test of liberty." The permanent registration, possible only in such a State institution, would be of invaluable assistance to the judicial and charitable officials in dealing with offenders against the law. For the first time we would have the machinery available for the comprehensive study and supervision of all the feeble-minded in the State. It would make possible many of the steps in research and prevention that are to-day out of the question. It would provide a system for the adequate mental diagnosis and social prognosis of all cases that must in one way or another become social responsibilities.

This last function would alone justify the existence of such State Clearing Houses, for it has heretofore been the one great missing link in our attack on the whole general problem. But with the establishment of such clinics, the development of special classes and special institutions for the training and care of the mentally defective, becomes an intelligent proposition. And with the supervision of such clinics in the hands of one centralized State Board, on which there would be representatives of all the various professions interested, to control the whole system of diagnosis, treatment, training and after care, as well as the supervision and co-ordination of the experimental work to be done at the various

institutions, we could for the first time be of real service to the individual and to the community.

A modest attempt to do just this was begun four years ago in the establishment of the New York Clearing House for Mental Defectives. Through the kindness of the Board of Trustees of the Post Graduate Medical School and Hospital, we were given the free use of the clinic rooms and office facilities. With the co-operation of Hon. Michael J. Drummond, then Commissioner of Charities, we were given the official recognition of and partial support from the city. The doctors in charge of the Clearing House also served on a special board at Randall's Island, thus giving opportunity for continued observation and treatment of a patient. While greatly hampered by lack of support and of a sympathetic understanding of our motives, the Clearing House has justified its existence by having examined and recommended treatment for about 8,000 patients in the last four years. But, of course, such work can be only really effective if it is given that official recognition and generous support which it is most likely to obtain as a State institution.

Equally important, if not more fundamental to the whole problem than this question of perfecting the social mechanism, is a sound method of inquiry into its causative factors.

Etiologically, feeble-mindedness can be divided into three main types. These can, of course, be redivided into many subordinate groups, the discussion of which would carry me far beyond the scope of this paper. In general, we find, then,

1. *The Formative Type*—wherein the cell development of the nervous system has been disturbed.

2. *The Traumatic Type*—wherein the brain tissue after development has been destroyed.

3. *The Functional Type*—wherein the cell development may have been normal, but the cells are unable to respond normally to stimulation because of the disturbance of their metabolism.

In the present status of medical science, the first two types seem absolutely hopeless, and our effort must be one of prevention rather than of treatment. But of the last or functional type, we have at least enough sure knowledge to make us see in what way the truth will come, and along what lines the remedial methods will reveal themselves. Let me reduce here to simplest terms, the theory of functional activity, which has already proven its value in the cases of Cretinism, and which holds out so much promise for the ultimate eradication of many other functional types of defect. The nerve cells depend for their developmental and their functional activities upon the chemical substances which nurture them. These chemical elements are to a certain extent selective in their effect upon the cells. Moreover, the strength of the reaction of any particular cell to an afferent stimulus depends upon the stability of its protoplasm, which, in

turn, is regulated by these special chemical elements known as hormones, which are glandular secretions. Thus as in the case of Cretinism, the disturbance of the secretion of the thyroid gland dwarfs both the developmental and the functional activities of the brain cells. This dwarfing can be greatly mitigated, if not entirely eliminated, by the external supplying of thyroid extract in just the right amount necessary to make the metabolism of the nerve cells normal.

Increased study of other types of feeble-mindedness will reveal further the relationship between the development and functional activity of nerve cells, and the production within the body of various other internal secretions, the nature of which are still a mystery to science. Moreover, deeper research will make clear the effect of a poison, or of a metabolic disturbance within the body of a pregnant woman, upon the cellular development of the foetus, and thus perhaps, indicate the cause of many of the cases of feeble-mindedness which today we know to be hopeless, and attributed to the vaguest of explanations—heredity. Scientific inquiry will yet make clear the casual relationship between the degeneracy of one generation and the mental deficiency of the succeeding generation. And this casual relationship will be found to be a much closer one than is defined by our present loosely drawn conception of hereditary transmission. But we must be willing to follow to its logical conclusion our faith that feeble-mindedness, like every other abnormal condition, is unnecessary, and therefore possible of elimination.

The available fields of research and prevention of mental deficiency are then, all social agencies within the community that are dealing in any way with the mental defectives. To carry out effectively a State-wide campaign for State control, we must develop a centralized system of diagnostic clinics where the mental status of all suspected cases of mental defect can be scientifically determined and registered. We must further provide enough well equipped schools and asylums for the treatment and training recommended as a result of that diagnosis. And lastly we must establish completely equipped laboratories at these institutions where the pathological findings can be correlated with the clinical symptoms. With clinics, schools, institutions, laboratories, fully equipped and co-ordinated under centralized State control, we will at last be enabled to begin the work of prevention and research.

The problem itself is of the most serious facing the country to-day. Every State in the Union is realizing the gravity of the peril, and is awakening to the need for action. A sound program of provision and prophylaxis must be adopted by the various groups of authorities throughout the nations, and a national campaign must be at once undertaken that will rise far above any questions of personal ambition or contentious rivalry.

The successful control of Amentia is most imperative. Only by attempting our task in the broadest and sincerest of spirits can we hope for success.

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## IMPROVEMENTS IN TECHNIQUE OF CESAREAN SECTION.\*

By WILLIAM MORTIMER BROWN,

ROCHESTER, N. Y.

IT is with a profound sense of its importance and a realization that in no minor degree does the most painstaking attention to detail of technique contribute to the successful employment of this most beneficent of surgical procedures.

While the early history of this operation is interesting because of its antiquity (it was done prior to 715 B. C.) details are not recorded and it was used only as a post-mortem attempt to save the life of the child when the mother had died at or near term.

Its use as a means or attempt to save the mother dates from about the beginning of the sixteenth century, but until within a comparatively few years it was not employed in any other than a forlorn hope and, of course, it was accompanied with a prohibitive mortality, yet it was an accepted procedure in hopeless cases and, after several centuries, Kayser found, in 1844, that the mortality rate was 62 per cent, while Tarnier said that up to that time there had not been a single successful case in Paris during the nineteenth century and Spaeth said the same of Vienna.

Asepsis, antiseptics and absorbable suture material were not known at that time and as they could not close the uterine wound and get the sutures out after the abdominal wound was closed the uterine incision was left open and the result was a pouring of blood and infection into the peritoneal cavity and the rule was a fatal termination.

In 1876 Poro proposed to do a supravaginal hysterectomy to avoid the dangers of infection and hemorrhage and his results were so good that for a time his operation replaced the more classical Cesarean section, but in 1882 Säger carefully sutured the uterine cut with 8 to 10 silver wire sutures which did not go through the decidual surface and it seems to me that the rules he then laid down, of extreme antiseptics and careful suturing of the uterine wound, amounts almost to a basic patent on which all of our success at the present time is founded.

During the early part of the nineteenth century many attempts were made by different men

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to do a supra pubic delivery without opening the peritoneal cavity. Prominent among these men were Joerg, Ritgen, Pfannenstiel, and Baudelocque and their operations varied from a transverse cut above the symphysis to one parallel with Poupart's ligament, where one could reach the lower uterine segment without passing through the peritoneum.

While some were very enthusiastic over these methods the difficulties attending them prevented a very general adoption of this method, especially, as our knowledge of obstetrics and asepsis advanced we did the operation earlier and the statistics of the transperitoneal route improved by leaps and bounds and the more involved extra peritoneal route has more or less been lost sight of.

From the time of Sanger's operation until Davis described his modification the operation was always done with a long incision and turning out the uterus from the abdominal cavity before it was opened and the child delivered. It was then thought that the thing of prime importance was to prevent the escape of the uterine contents into the peritoneal cavity and Davis thought that this could be equally well prevented with a short incision located high on the abdominal wall if absorbant pads were used and the uterus held up against the incision.

This proved to be so and now a large percentage of operators are using this short incision and do not bring the uterus out of the abdomen at all. I will not take up your time with a detailed description of these operations as you are all so very familiar with them and the literature is now so well supplied that you may find such detail in almost any journal you pick up, but I have made some slides showing the various steps in several of the more common methods of doing this operation which I will show in a few minutes, but there are disadvantages and dangers which have accompanied all forms of operation up to the present time which I want very much to talk about today, and I feel that we are peculiarly fortunate in having Dr. Hirst and Dr. Davis with us to take part in this discussion.

What are the disadvantages we meet in doing the operation of classic Cesarean section at the present time? I believe that the one greatest trouble that the operator has in doing this operation, as in any other operation within the abdominal cavity is in keeping the coils of intestine and the stomach out of the way both of danger of injury and from interference with the field of operation.

Those who have been doing this operation have a keen realization of how quickly the uterus will slip down into the pelvis when it is emptied of its contents unless it is carefully held up into

the incision and many times it is impossible to prevent a large amount of the intestine from being forced entirely out of the wound. Does this add to the dangers of infection? Yes! One of my assistants once picked up the uterus with a Volsellum and when I came to look at it there were three small punctures of the gut where he had included a coil of the intestine in the grasp of the clamp and they had to be sutured. This same accident has happened to others.

To overcome these disadvantages Dr. Davis proposed to put in some heavy sutures at the upper and lower angles of the uterine wound and left the ends long to hold the uterus against the abdominal cut while it was being sutured.

What does the use of large gauze pads packed into the peritoneal cavity do beside partly holding back the intestine? Do they promote adhesions? Yes! Do they tend to cause post-operative distension, ileus, gastric dilatation and gas pain? Yes! Does this irritation of the abdominal contents tend to interfere with the early and free action of the bowels after an operation? Yes!

In this as in all other abdominal surgery one of the greatest handicaps has been this sort of solar plexus jolt due to the handling of the intestine so that the great cry in abdominal surgery has been "Get in and get out," "Don't touch a thing within the peritoneal cavity that is not directly connected with your operation and when necessary handle with the utmost gentleness," "Don't use pads if it can be avoided."

My firm belief is that any advantage which may have seemed to attend the various forms of extra peritoneal operation for supra-pubic delivery were due not so much to the avoidance of infection as to the absence of peritoneal injury and the resulting improvement in convalescence.

With these things in mind the writer has cast about for some means of overcoming these disadvantages without adding to the technical difficulties of the operation such as are involved in the various forms of extra peritoneal operation or their modifications by which the uterus is reached through the lower uterine segment and I now propose that the operation shall be done in the usual manner, as described by Davis, until the uterine cavity is opened; that then and before the child is delivered the edge of the uterine cut be fastened to the abdominal cut by from eight to ten temporary sutures which will pass entirely through the uterine muscle and the abdominal wall. These sutures may be of any material that the operator prefers, but the writer thinks that a medium-sized silk will be used with the greatest facility.

The placing of these sutures will occupy about one and one-half minutes and when they are in place the operator is free to disregard the uterus and its relation to the abdominal cavity

until such time as he has begun or partly completed the closure of the uterine cut.

The careful development of this technique will not add any time to the ordinary operation as the time lost in placing the sutures will generally be saved in the further steps when the operator is not bothered with the intestines getting in his way and he does not have to spend precious time in wiping blood clots and meconium out of the peritoneal cavity.

I have had some drawings made which, though rather crude, will show you, perhaps, better than my words, what the procedure is.

The writer has used this method now in four cases and while the small number is, of course, insufficient on which to base any positive conclusions, yet in the presence of my own unfamiliarity with it, and that of my assistants, and in one case a little lapse on the part of the anæsthetic at an inopportune time the result in these cases has been impressive so far as the comfort and rapidity of convalescence is concerned, and the writer is definitely convinced that this one change in the technique of an operation that has proven its superiority will add its full quota to the saving of lives and comfort in this operation.

Very briefly the following cases are reported:

*Case 1.*—Mrs. Anna Michelson, age 36. Previous labor was protracted and ended with high forceps extraction of a dead baby.

She was admitted to the service on March 6, 1915. The pelvis was moderately contracted of a Naegele type. The measurements were interspinous, 22 cm.; intercrestal, 27 cm.; external conj., 16.5 cm.; rt. obl., 22 cm., and left obl., 20 cm. The diagonal conj. was 8 cm.

The patient had been in labor about fifteen hours and on admission was having pains at one to three-minute intervals. The cervix was completely dilated and the membranes were unruptured. The head was floating and could not be made to engage by external pressure.

The operation was done in the manner suggested, using eight temporary sutures, and consumed thirty-three minutes. The child weighed eight pounds and twelve ounces. The mother's recovery was rapid and entirely free from any gas pain or distension and no nausea or vomiting.

In this case the intestine was not touched nor hardly seen during the whole of the operation and there was absolutely no soiling of the peritoneum.

*Case 2.*—Mrs. Lillian Chrisley. Age 30. Primipara. The pelvic measurements were: interspinous, 21 cm.; intercrestal, 24.5 cm.; external conj., 17 cm.; both obliques, 20 cm. The presentation was cephalic O. L. A., with the

head riding on the symphysis. Contractions when admitted to the service were two minutes apart and severe; the cervix was not taken up or dilated; the membranes were ruptured and meconium was escaping.

While this was a border line case it was felt that the mother, who was frail and tired from overwork, was not in condition to stand a prolonged labor, with probable artificial delivery in the end, and abdominal delivery was offered and accepted.

The operation was done in the same manner as the previous case, using ten temporary sutures to fasten the uterus to the abdominal wall. The time taken to place these sutures was just two minutes. A temporary lapse of the anæsthetic allowed the patient to strain just as the last of the temporary sutures was removed and a coil of intestine was pushed into the incision. There was no soiling of the peritoneum. During the day the patient vomited once and complained for about an hour of some distress from gas, but there was no distension whatever and the convalescence was uneventful.

*Case 3.*—Mrs. Culhane. Age 36. Primipara. Was seen in consultation on March 12th. Patient historically and apparently in the 42nd week of her pregnancy. She was suffering from toxæmia with albuminuria and many casts. Arterial tension 190 plus. A castor oil purge was ordered and if labor did not supervene it was decided to induce it the following day.

It was a cephalic presentation with the head freely movable above the brim.

Her labor began by the rupture of the membranes at one A. M. and she was admitted to the hospital at nine, with the contractions three minutes apart and very severe. Examination showed the cervix about one-third dilated, with the head riding high and presenting a face at the brim.

While version would ordinarily be the procedure of choice in such a case, it was felt that owing to the length of time labor had been in progress and the total absence of fluid in the uterus made it a matter of about even choice as regards the maternal danger, and as they were Catholic and had a passionate desire for a live child and a further examination showed a firmly closed anterior fontanelle, it was determined to do a Cesarean section. The operation was done ten hours after the onset of labor in the manner already described, using eight temporary sutures. The convalescence was rapid and without post-operative nausea, vomiting, distension or gas pain.

*Case 4.*—Mrs. Ida Garneck. Age 21. Primipara. Her labor began at noon on April 15,

1915. Membranes ruptured at 4 P. M. and she was admitted to the service late in the afternoon.

The pelvis measured: interspinous, 23 cm.; intercrestal, 25 cm.; external conj., 16.5 cm., and the diagonal conj., 10 cm. Cephalic presentation with the head movable above the brim. The operation was done at midnight under some disadvantages. When the abdomen was opened the stomach, somewhat dilated, appeared in the wound, and before the uterus could be opened it was necessary to place a gauze pad into the cavity. The uterine incision was stitched to the one in the abdomen with temporary sutures, which in this case took about two and one-half minutes. This patient complained for some days of more or less pain low down in the right side of the abdomen, but there was no distension. In all of these cases, but the first one, the first row of uterine suture was placed before the temporary sutures were cut, and generally the temporary ones at the upper angle of the wound are left until the second or seromuscular row is nearly completed.

Routh gives the mortality rate in infected or suspected cases as 17 per cent. Williams says that the mortality rate in cases where the operation is done after the patient is in active labor is 10 or 12 per cent. While a series of forty cases is not large, yet such a series under the care or supervision of the writer shows a total mortality in all cases of 10 per cent. This series includes cases of primary and late operation of eclampsia, toxæmia, placenta prævia, tuberculosis, heart disease, as well as contracted pelvis, many of the cases combining more than one element of indication. Of the cases, twenty-two were operated on while in active labor dating from six hours to several days, or else were depleted by antepartum bleeding, and practically every one had been examined by midwives or physicians at their homes, and a number had had attempts at forceps delivery.

Of the twenty-two cases operated on under such conditions but one died, making a death rate of less than 5 per cent, and but one child was lost.

There were two Poro operations, one primary in a case of large carcinoma of the cervix, where a subsequent operation removed the growth and the woman is still living, now two and one-half years.

The other Poro was in a case between five and six days in labor and badly infected. This child was dead and macerated, but a true conj. of 5 cm. made the operation one of obligation.

Now, if attention to detail of technique and after-care will give such results under former methods of operation, I firmly believe that a modification as described above will further reduce the rate better than the involved extra peritoneal methods that have been used.

## REPORT OF A CASE OF SPONTANEOUS RUPTURE OF THE UTERUS.

By ROSS McPHERSON, M.D.,  
NEW YORK CITY.

**K.** T., 33; born Ireland; para II. Admitted to the wards of the New York Lying-In Hospital with following history: P. H., history not abnormal; no diseases bearing on present condition. Denies venereal, as does husband, and no evidence of venereal disease found. No miscarriages.

She was pregnant for first time in 1912, and was delivered by a high forceps at term, child living only a day and a half. Since this time the patient has been perfectly well. At time of admission she considered herself five months pregnant.

The day before admission, while getting dinner for her husband, she was seized with sudden sharp abdominal pain and felt somewhat faint! There was no accident, fall, blow or other emergency to account for these symptoms; this feature was carefully inquired into and absolutely nothing found. Although feeling rather uncomfortable she continued about her work. Her husband came home, ate his dinner and she then told him that she felt badly. He sent for the family doctor, who came, did not examine her, but gave her some powders which failed to relieve her. Late that night she felt so much worse that the doctor was again summoned, and gave her some more medicine, which once more did not relieve her. She went along thus until late the next afternoon, steadily having more pain, until early in the evening, when her condition became so critical that her physician decided to send her to the hospital.

When seen about 9 P. M. she was in extreme shock, pulseless and with all the signs of abdominal bleeding. A saline infusion and the usual shock treatment was given, which failed to have any beneficial effect. Under the very lightest kind of ether anæsthesia, the abdomen was opened, and the cavity found entirely filled with blood! A five months' fetus was free in the cavity and attached by the umbilical cord to the placenta which was still in the uterus. The uterus was ruptured transversely across the fundus (as shown in the illustration). The fetus and placenta were extracted and a rapid supravaginal hysterectomy performed; abdomen was rapidly wiped dry and the wound closed with through and through sutures of silkwormgut, the time consumed in the operation being about eighteen minutes. The condition of the patient had not changed, either for better or for worse, and another saline infusion was given with very little result. She was put to bed, and her husband sent for, in order to transfuse her. As soon as preparations could be made the case was transfused by Dr. Losee, using the Lindeman method

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 29, 1915.

and giving the patient about 900 c.c. of her husband's blood, into a vein of the left arm. The patient's condition at the time the transfusion was started was such that I seriously doubted whether or not she would live until the needle was inserted. She was entirely unconscious, breathing jerkily and stertorously, absolutely waxy in color, no pulse at wrist, and heart beats only faintly obtainable with the stethoscope.

At the close of the transfusion she was conscious, pink-cheeked, with pulse at the wrist of good quality, although rather rapid, and examination the next day showed a hemoglobin of 58 per cent and red cells 2,960,000. The convalescence was unmarked by complications, and while red cells and hemoglobin fell to 1,820,000 and 38 per cent respectively at the time of her discharge on the twenty-fifth day the red cells were 3,200,000, and the hemoglobin 50 per cent.



She reported back to the hospital one month later feeling and looking perfectly well, with 4,500,000 red cells and hemoglobin 80 per cent.

The report of the pathologist is as follows:

**Uterus**—The specimen is made up of the body of the uterus, both Fallopian tubes and ovaries. The uterus is somewhat irregular in shape and measures 16 cm. x 11 cm. x 6.5 cm. There is a large triangular laceration in the anterior wall, extending from the fundus downward and outward to the left. There is some hemorrhage beneath the peritoneal surface at the edges of the rupture and the uterine wall in this region is 5 mm. thick. Microscopical examination of the uterine wall at the edge of the rupture showed that the muscle bundles, and even the muscle cells, are swollen but otherwise normal. Numerous chorionic villi are observed in this area, but they do not penetrate very deeply into the myometrium. The endometrium is irregular and rough and, microscopically, the decidua is nor-

mal. The right Fallopian tube is situated at the fundus, and extends inward toward the medium line, beneath the peritoneum to the edge of the rupture. The left Fallopian tube is smaller than the right, and is attached to the anterior surface of the uterus about midway between the fundus and the internal os.

**Diagnosis:** Rupture of the uterus; anomaly of the left Fallopian tube. Wassermann reaction negative.

The interesting lessons to be learned from a study of this case are:

1. That an extensive rupture of the uterus can occur without apparent cause or reason, and that after occurrence it may be some hours before the symptoms are sufficiently marked or grave to cause serious alarm.

2. That no matter how badly off the patient may seem to be, prompt and proper operative measures may save her life.

3. That the value of actual blood transfusion in these cases is inestimable and more like a miracle than almost anything in surgery.

4. That it behooves the physician to make a careful examination of his patient whenever she complains of abdominal pain.

#### A CASE OF HYDROCEPHALUS.\*

By ALFRED W. ARMSTRONG, M.D.,

CANANDAIGUA, N. Y.

**T**HE condition of hydrocephalus, because of the hopelessness of it, if for no other reason, has attracted the interest of all physicians for centuries, and because of the fact that there is no spontaneous retrogression, various remedies and operations have been undertaken. Hypocrites is said to have tapped the distended ventricles in an attempt to relieve the tension on the brain, but without any satisfactory results.

The condition is of special interest to obstetricians since it rather frequently occurs as a complication of labor, and it is for this reason that this case is reported before this section.

This baby boy was born September 22, 1914, being today about seven months old. On account of uterine inertia delivery was accomplished by means of forceps, and the physician who attended the case reports nothing abnormal about the condition of the baby at that time. His weight was seven and one-half pounds. The baby's mother is eighteen years of age, and was operated upon for ovarian and appendix disease within the previous year. Her history shows that she has been subject to some kind of convulsions, probably not epileptic. The father has a negative history with the exception of specific urethritis, during the year previous to the baby's birth.

When the baby was four days old, he refused to eat and regurgitated some curds, the stools

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 28, 1915.



were green in color and contained curds; his weight decreased to seven pounds, the rectal temperature was 99.8. On the fifth day he cried almost constantly, and the temperature rose to 101.6. The symptoms of intestinal infection continued until the fourteenth day, when symptoms of meningitis developed, the highest temperature recorded being 103. Opisthotonus was the first symptom. During the next three days frequent general convulsions developed, becoming almost continuous on the eighteenth day. Following this the baby seemed to improve, took his feedings well, and seemed quite like a normal baby until about November 1, when he was about five weeks old, he became drowsy, sleeping almost constantly for nearly seven days, after which time it was noticed that the head began to enlarge out of proportion to the body. The first measurement made at that time was seventeen inches in circumference. Since that time there has been a steady increase in the size of the head, the sutures spreading to accommodate the fluid as the pressure increases. The maximum circumference of the head is 26.75 inches (65 cm.).

The Wassermann reaction, as well as the Luetin test, is negative. The child had meningitis following intestinal infection at a time when there was no apparent abnormality of the skull. It seems quite probable that at this time something happened to obstruct the outflow of the cerebro-spinal fluid, and that this case is one of internal hydrocephalus of the obstructive type. In making the pheno-sulphonephthalein test by injecting the coloring material into the ventricle, and allowing the cerebro-spinal fluid from a lumbar puncture to drip into an alkaline solution, none of the material was recovered in a period of twenty minutes, thus indicating the absence of free communication between the ventricles and the spinal canal. This being true, it would seem more probable that the case is one of the obstructive type rather than one due to lack of absorption.

The recent work of Frazier, reported during the present month, makes it seem quite probable that the cerebro-spinal fluid is a secretion derived for the most part from the choroid plexus, although it is admitted that a portion of it may be derived from the perivascular system of the nervous tissues. He believes that "By recent experiments and observations certain definite contributions have been made that cannot help but clear up many of the difficulties in diagnosis and treatment." He mentions favorably an operation which connects the subarachnoid space with the pleural cavity.

Dr. Irving S. Haynes has fully described his operation before the Pediatric Section at this meeting, and I shall not attempt to review it here. This case is probably not a favorable one for operation, but I have ventured to present it, on account of the unique features it embodies, in the hope that we may all keep in mind the fact that a certain percentage of these cases, if not too far advanced, may be relieved by surgical means.

This baby, although his head weighs at least twice as much as his body, has not accepted any of the usual causes of death, and I am not able to report the post mortem findings, but I will show you how he looked when he was four months old.

A photograph of the baby, taken when four months old, shows the enlargement of the head, which seems quite symmetrical, the absence of fat and contractures of the legs and thighs.

Another photograph, taken at the same time, shows, in addition to the other features, the spastic contraction of the hands and the presence of a double inguinal hernia.

A front view shows the enormous lateral enlargement of the cranium, the dilatation of veins of the skull, the presence of strabismus, the left being internal and the right external in type. This also shows the contraction of the fingers which hold tightly the inverted thumbs.

A skiagram of the head shows the degree of development of the bones, the great thickness of the occipital bone, indicating the difficulty which might be encountered in attempting the operation suggested to connect the cisterna magna with the lateral sinus.

A skiagram shows a larger portion of the body, which indicates that the baby has organs in the chest and abdomen which are not apparently abnormal, although there is perhaps some evidence of rickets.

## Notes from the State Department of Health

### CIRCUS INSPECTION

We are frequently asked why should the State Department of Health interest itself in circus troupes and not in theatrical troupes and other show people?

Our reply is that the State Department of Health does pay attention to all traveling troupes, but as circus and many carnival troupes travel in their own cars, eating and sleeping on the train, they are practically traveling villages and do not come under the jurisdiction of any particular municipality or health officer. It is possible to have cases of communicable disease among them, with no one in authority to say what measures of isolation should be maintained. Therefore, the State Department of Health inspects the people attached to these traveling troupes, their sleeping quarters, etc., in order to guard the public against the introduction of small-pox, measles, scarlet fever and other infectious diseases. Some of these troupes carry 1,500 to 1,800 people, including all classes and nationalities.

The performers usually travel in a section by themselves, with the conveniences of Pullman coaches, but the work trains and the animal sections are not so well provided.

If a case of communicable disease attacks a performer, he or she will speedily consult a physician and most likely be transferred to a hospital, thus removing the source of infection. But if the canvassmen and others who labor about the show grounds become infected, it is possible for them to be ill for several days before their absence is noticed.

Methods of inspection, have, therefore, been instituted to secure speedy information regarding sanitary conditions and the presence or absence of communicable diseases.

It is a pleasure to say that managers are always willing to assist the health authorities in this inspection because the presence of disease is as unwelcome to them as to others.

## Correspondence

New York City,  
September, 1915.

DR. JOHN COWELL MACEVITT,

*Editor, NEW YORK STATE JOURNAL OF MEDICINE.*

In the September number of the Journal there appeared a letter from the Deputy Commissioner of Health of New York City, relative to the editorial in the JOURNAL of August, 1915, on "Medical Economics."

The able Deputy Commissioner of Health calls attention to that part of the editorial that speaks of the debatable activities of the Department of Health, namely, the issuing of employment certificates to children after examination by the Health authorities. The editor states that 47,000 such certificates were issued in 1913.

The Deputy Commissioner recognizes that physicians might give a certificate of equal value in the following words:

"You are doubtless correct in believing that examinations of equivalent value might be made by physicians in their private offices and that parents of the children, who apply for the certificates, might be able to pay the small fee which would be charged by physicians for this service."

The Deputy Commissioner leads one to believe that the Department of Health does not desire to practice medicine when he says:

"I assure you that this is a burden which the Department must assume."

The reason for the Deputy Commissioner's letter is that the law requires the Department of Health to make the examinations and issue employment certificates to children. We read your editorial as asking that the Legislature be shown that some of the activities of the Department of Health are foreign to its legitimate functions, such as the treatment of individuals in its non-contagious clinics, and making examinations of thousands of children prior to issuing employment certificates.

The Department of Health heretofore has co-operated with the Legislative Committees of the recognized Medical Societies to prevent just such activities being imposed upon the Department of Health as a burden, and for other reasons. Is there any record in the Department of Health registering a protest against the employment certificate law before its enactment in 1912? I believe the answer will be in the negative.

We agree with the editor when he says we most heartily commend the good work done by the Department of Health of New York City, but the thought comes to our mind that the prevention and control of pestilential diseases is emphatically the object of the Department of Health, but the treatment of individuals for non-contagious diseases in clinics is an innovation.

Let charity be charity, and let us hope that the Department of Health will give its aid to transfer its non-contagious practice of medicine over to the Department of Charities, whose inspectors are able to separate the worthy from the unworthy, and paripassu the medical profession will be economically benefitted. Many of the Health Officers, from Commissioners to Inspectors, are physicians, and as such should be loyal to the medical profession, as well as to home and country.

We ask the Department of Health to co-operate with the members of the medical profession in working for the repeal of the statutory activities which are an illegitimate burden on the Department of Health, such as making physical examinations of children prior to issuing employment certificates, and also for such activities as non-contagious clinics initiated by the Board of Health and practiced by the Department of Health.

Yours very truly,

E. ELIOT HARRIS.

New York City,  
September 29, 1915.

DR. JOHN COWELL MACEVITT,

*Editor, NEW YORK STATE JOURNAL OF MEDICINE.*

MY DEAR DOCTOR: Your comments in the issue of August, 1915, on "Medical Economics" are timely and of vital importance to all practitioners of medicine, not only in New York, but in the entire country.

The letter from the Deputy Commissioner of Health, City of New York, is also interesting in that it shows how little his department understands the viewpoint of the practicing physician of New York City.

Everybody thoroughly appreciates the good work done by the Health Department in the various departments, especially in the inspection of infectious diseases and the care of the same in hospitals when it is improper to care for them in other than specially equipped institutions. On the other hand, a large percentage of physicians do not believe that it is the office of the Department of Health to establish and maintain clinics for the treatment of outdoor patients who live at home. In this instance a patient is liable to spread the disease in his home and also in the journey to and from the clinic. There is no excuse for the establishment of "Clinics for School Children." If school children are too poor to pay for medical services, there are ample dispensaries in all parts of the city where they can be treated.

The medical profession pays taxes and so supports the Department of Health, and by so doing, in many instances, deprives itself of a part of its legitimate livelihood.

Yours sincerely,

RALPH WALDO.

Brooklyn, N. Y.,  
September 23, 1915.

DR. JOHN COWELL MACEVITT,

*Editor, NEW YORK STATE JOURNAL OF MEDICINE.*

It was with considerable interest that I read in the September issue of the Journal the letter of Dr. Haven Emerson, Deputy Commissioner of Health of the City of New York, which had been called forth by your editorial for August, entitled "Medical Economics," dealing with the extended and ever extending activities of the Department of Health, citing the instance of its examination of school children for working papers. The cause of the special interest was the evident harmony between the Medical profession of the State as represented by the Journal, and the Health Department of the City of New York as represented by Dr. Emerson; both holding, although for different reasons, that such examinations might properly be made by physicians outside the Health Department.

It would seem from this that a united effort could, and should, be made, to repeal the statute which imposed this duty upon the Health Department and that the Health Department and the Medical profession of the State should maintain a persistent watchfulness to prevent the imposition of other such duties which would tend to take the Department of Health out of its proper field of sanitation into the practice of medicine. This does not attempt to open the great question of paternalism in medicine nor of the socialization of medicine, questions which will be settled by the experience of the future. That one or the other may eventually obtain, is well within the range of possibility. What I wish to urge is that until such radical changes have been made, until it is understood everywhere that the government will assume the care of the sick, the activities of any Department of Health shall be kept within well defined limits.

WILLIAM J. CRUIKSHANK.

New York City,  
October 6, 1915.

DR. JOHN COWELL MACEVITT,

*Editor, NEW YORK STATE JOURNAL OF MEDICINE.*

MY DEAR DOCTOR: In the June, 1913, edition of your JOURNAL the following assertion appears in an article written by Drs. Fitch and Prince, of Rochester, and read before the State Medical Society:

"Shortly after his announcement appeared, a reporter for a great New York newspaper, masquerading as a physician, visited Portland, and as a result of this visit Dr. Abbott and his work were featured in a double page of a Sunday edition."

I am convinced that the reference is to me, one of the editors of the New York Times, and refers to an article published on December 3, 1911. I wish to refute the possibly false impression created by this statement, because I am a licensed physician and one of the editors of the New York Times.

I am sure Dr. Abbott knew that I was a physician, one of the editors of the New York Times, and a writer of medical articles for that paper, as well as my purpose in visiting him.

I believed and still believe that Dr. Abbott's efforts were such as should be given to the public after he had scientifically described then in the medical press. I adopted that course.

With kindest regards, believe me,

Very truly yours,

VAN BUREN THORNE, M.D.

Elmira, N. Y.,  
September 16, 1915.

DR. JOHN COWELL MACEVITT,

*Editor, NEW YORK STATE JOURNAL OF MEDICINE.*

Closing the discussion of Dr. Allen's valued contribution in the September number of the Journal, Metabolic Studies in Diabetes, Dr. Swan asks an unusual question: "Would it be wise to starve such a patient?"

To starve means to kill with hunger. We are sure Dr. Swan would not think of killing any patient with hunger. Nor would any other physician.

It is unfortunate that the word starve is so frequently employed when the writer or speaker means fast. For instance, the fasting cure is a possibility, but the starving cure would be an impossibility.

Undoubtedly the treatment of various conditions by fasting will become more popular in the future than it has been in the past. But physicians, at any rate, should avoid referring to such a measure as starvation.

Very truly yours,

WM. BRADY.

Elmira, N. Y.  
September 25, 1915.

DR. JOHN COWELL MACEVITT,

*Editor, NEW YORK STATE JOURNAL OF MEDICINE.*

Primary Day, Election Day, convening of the Legislature, march of the untrained clamoring for recognition! Prepared or unprepared? On this rests the welfare of the public. If every member of our State Society would make it his business to find out the attitude of aspirants to office in the State Legislature, the evil could be forestalled at its source. If it be too late to see that only good men are nominated, then find out the views of those nominated and vote accord-

ingly. We have the fate of our medical law in our own hands. We have the safety of the public to answer for. Let every man do his duty NOW.

Very truly yours,

ROSS G. LOOP.

CHRISTIAN SCIENCE COMMITTEE ON PUBLICATION  
FOR THE STATE OF NEW YORK

DR. JOHN COWELL MACEVITT,

*Editor, NEW YORK STATE JOURNAL OF MEDICINE.*

New York City,  
September 15, 1915.

In reply to the statement of Dr. George W. Kosmak in your August issue, permit me to assure the critic that at no time have Christian Scientists, either individually or collectively, endeavored "to assail legitimate medical practice." Although Christian Science and materia medica are diametrical opposites in both precept and practice, it should be understood by the medical profession that no class of people have greater regard for the upright, noble-hearted physician than have the Christian Scientists. On page 444 of "Science and Health with Key to the Scriptures," Mrs. Edly writes, "Students are advised by the author to be charitable and kind, not only towards differing forms of religion and medicine, but to those who hold these differing opinions."

Christian Scientists realize that, if obliged to choose between Christian Science and materia medica, many people would choose the latter. To expect help from Christian Science without a sincere desire for that help, would be useless. To attempt to force Christian Science upon the public would, of course, be madness. Therefore, so long as there is a single individual who prefers materia medica, Christian Scientists not only believe that he should be permitted to have that form of treatment, but they believe that he should have the best there is. Viewed from this standpoint, Christian Scientists are perhaps as desirous as the profession itself to see the standard of medical practice steadily raised.

What the Christian Scientists object to is the tendency on the part of a certain element in the medical profession which seeks the enactment of laws that would prevent Christian Scientists and others from enjoying the same degree of personal liberty that physicians and those preferring medical treatment would fight for if anything threatened to deprive them of that liberty. If the term practice of medicine means treatment by material methods, Christian Science is not the practice of medicine, and it would be chimerical to think of permitting a material system to interfere with or supervise a spiritual system.

If, on the other hand, the term practice of medicine includes all systems of healing, then Christian Science could probably be termed the practice of medicine; but since all schools of healing lay claim to equal ability to heal, they should enjoy equal rights, and the only fair test of value would be to measure them by their results only, for cures should be more convincing than mere claims. The only infallible healer of the sick the world has ever known said: "By their fruits ye shall know them," not by their words. Any other standard would place dangerous power in the hands of a single experimental healing system, it would stifle honest investigation and research, and would come dangerously near stopping the wheels of progress.

Sincerely yours,

ROBERT S. ROSS.

## 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 STARVATION TREATMENT OF DIABETES, with a Series of Graduated Diets as used at the Massachusetts General Hospital, by LEWIS WEBB HILL, M.D., and RENA S. ECKMAN, Dietitian, with an Introduction by RICHARD C. CABOT, M.D. Price \$1.00 W. M. Leonard, publisher, Boston, Mass.

TEXT BOOK OF MATERIA MEDICA FOR NURSES Compiled by LAVINIA L. DOCK, Graduate of Bellevue Training School for Nurses, Fifth edition, revised and enlarged. G. P. Putnam's Sons, New York and London, 1915.

DISEASES OF THE SKIN AND THE ERUPTIVE FEVERS. By JAY FRANK SCHAMBERG, M.D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Third edition, revised. Octavo of 585 pages, 248 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$3.00 net.

THE MEDICAL CLINICS OF CHICAGO. Volume I. Number II. (September, 1915.) Octavo of 194 pages, 44 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published Bimonthly. Price, per year, paper, \$8.00; cloth, \$12.00.

DISEASES OF THE NOSE AND THROAT. By ALGERNON COOLIDGE, M.D., Professor of Laryngology in the Harvard Medical School. 12mo of 360 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$1.50 net.

A TEXT BOOK OF SURGERY FOR STUDENTS AND PRACTITIONERS. By GEORGE EMERSON BREWER, A.M., M.D., Professor of Surgery, College of Physicians, New York; Surgical Director, Presbyterian Hospital; Consulting Surgeon, Roosevelt Hospital, assisted by ADRIAN V. S. LAMBERT, M.D., Associate Professor of Surgery, Columbia University; Attending Surgeon, Presbyterian Hospital, and by members of the surgical teaching staff of Columbia University. Third edition, thoroughly revised and rewritten. Octavo, 1,027 pages, with 500 engravings and 23 plates in colors and monochrome. Cloth, net, \$5.50. Lea & Febiger, publishers, Philadelphia and New York, 1915.

CANCER: ITS STUDY AND PREVENTION. By HOWARD CANNING TAYLOR, M.D., Gynecologist to the Roosevelt Hospital, New York; Professor of Clinical Gynecology, Columbia University; Member American Society for the Control of Cancer, etc. 12mo, 330 pages. Cloth, \$2.50 net. Lea & Febiger, publishers, Philadelphia and New York, 1915.

MODERN ASPECTS OF THE CIRCULATION IN HEALTH AND DISEASE. By CARL J. WIGGERS, M.D., Assistant Professor of Physiology in Cornell University Medical College. Octavo, 378 pages, illustrated with 104 engravings. Cloth, \$3.75 net. Lea & Febiger, publishers, Philadelphia and New York, 1915.

THE PRINCIPLES OF BACTERIOLOGY. A Practical Manual for Students and Physicians. By A. C. ABBOTT, M.D., Professor of Hygiene and Bacteriology and Director of the Laboratory of Hygiene, University of Pennsylvania. 12mo, 650 pages, with 113 illustrations, 28 in colors. Cloth, \$2.75 net. Lea & Febiger, publishers, Philadelphia and New York, 1915.

OUTLINES OF INTERNAL MEDICINE. FOR THE USE OF NURSES. By CLIFFORD BAILEY FARR, A.M., M.D., Instructor in Medicine, University of Pennsylvania; Assistant Visiting Physician, Philadelphia General Hospital; Pathologist to the Presbyterian Hospital.

12mo, 408 pages, illustrated with 71 engravings and 5 plates. Cloth, \$2.00 net. Lea & Febiger, publishers, Philadelphia and New York, 1915.

A TEXT BOOK OF CHEMISTRY AND CHEMICAL URANALYSIS FOR NURSES By HAROLD L. AMOSS, S.B., S.M., M.D., Dr. P. H., formerly Chemist, Hygienic Laboratory, U. S. Public Health Service; Physiological Chemist, U. S. Bureau of Chemistry; Instructor in Physiological Chemistry, George Washington University Medical School; Assistant in Preventive Medicine, Harvard Medical School. 12mo, 268 pages. Cloth, \$1.50 net. Lea & Febiger, publishers, Philadelphia and New York, 1915.

THE PRINCIPLES OF HUMAN PHYSIOLOGY. New (second) edition. By ERNEST H. STARLING, M.D., F.R.C.P., F.R.S., Jodell Professor of Physiology in University College, London. Octavo, 1,271 pages with 566 illustrations including 10 in colors. Cloth, \$5.00 net. Lea & Febiger, publishers, New York and Philadelphia, 1915.

SYPHILIS AS A MODERN PROBLEM. By WILLIAM ALLEN PUSEY, M.D., Professor of Dermatology in the University of Illinois. Price, cloth, 50 cents; paper, 25 cents. Pp. 129. Chicago: American Medical Association, 1915.

COLLECTED PAPERS FROM THE RESEARCH LABORATORY OF PARKE, DAVIS & Co., Detroit, Mich. Dr. E. M. Houghton, Director. Reprints—Vol. 3, 1915.

PRACTICAL MATERIA MEDICA AND PRESCRIPTION WRITING, with illustrations. By OSCAR W. BETHEA, M.D., Ph.G., F.C.S., Asst. Prof. of Materia Medica, Tulane Univ., La.; formerly Prof. Chemistry and Pharmacology, Mississippi Med. Coll., etc. F. A. Davis Co., Publishers, Philadelphia. English Depot, Stanley Phillips, London, 1915.

IN A FRENCH HOSPITAL. Notes of a Nurse. By EYDOUX-DEMIANS. Translated by Betty Yeomans. Duffield & Co., New York. 1915. Price, \$1.00 net.

COLLECTED PAPERS FROM THE RESEARCH LABORATORY OF PARKE, DAVIS & Co. The compiled articles from the research laboratory which have been published in scientific journals during 1914.

A SYNOPSIS OF MEDICAL TREATMENT. By GEORGE CHEEVER SHATTUCK, M.D., Assistant Physician to the Massachusetts General Hospital. Second edition, revised and enlarged. Boston. W. M. Leonard, Publisher. 1915. Price, \$1.25.

HABITS THAT HANDICAP. The Menace of Opium, Alcohol and Tobacco, and the Remedy. By CHARLES B. TOWNS. New York. The Century Co. 1915. Price, \$1.20. Postage, 10 cents.

## Book Reviews

A HANDBOOK OF PSYCHOLOGY AND MENTAL DISEASE. By C. B. BURR, M.D., Medical Director Oak Grove Hospital (Flint, Mich.); Member American Medical, American Medico-Psychological and Neurological Associations. Fourth edition, revised and enlarged with illustrations. F. A. Davis Company, Philadelphia. English Depot: Stanley Phillips, London. 1914. Price, \$1.50 net.

This little work, which claims to be nothing more than a handbook for nurses and practitioners, certainly covers the ground clearly and concisely. The chapter on psychology is clear, written in plain language, and covers the whole ground. The same may be said on the section devoted to mental disease. The narrow limits of the book make one feel sorry that such a writer as Dr. Burr had not undertaken to present a larger work; for, as he states, the allied cases are much more common than the classical ones; and he has been forced to present typical cases, which are not often found in practice. It is to be hoped that in future

editions he will present a more comprehensive treatise, such as he ought to write.

ARTHUR CONKLIN BRUSH, M.D.

**ANOCI-ASSOCIATION.** By GEORGE W. CRILE, M.D., Professor Surgery, School of Medicine, Western Reserve University, Cleveland; and WILLIAM E. LOWER, M.D., Associate Professor Genito-Urinary Surgery, School of Medicine, Western Reserve University, Cleveland. Octavo of 259 pages, with original illustrations. Philadelphia and London, W. B. Saunders Company, 1914. Cloth, \$3.00 net.

As long as surgery lives and wherever it is practiced, the name of Crile will be remembered in connection with the shockless operation.

He has delved in the realm of psychology, and has introduced certain principles which will remain a monument to his endeavors. Many of his monographs relative to surgical shock, problems of surgical operations and blood pressure, have already attracted world-wide attention. As a result of these investigations, experimental and clinical, he has evolved the kinetic theory of shock and anoci-association, and presents a treatise upon this subject of 250 pages. It is divided into two parts. One deals with the kinetic theory of shock, and the principle of anoci-association. A summary is also included of a series of experiments published previously elsewhere. Part II deals with the application of this theory to the technic of operations.

It is a practical presentation. It represents a very valuable principle which has been promulgated for the prevention of shock. This, in the author's words, is: "the result of excessive conversion of potential into kinetic energy in response to adequate stimuli." According to his conceptions, the lesions are to be found in the cells of the brain, liver, and suprarenals. The considerations of the histologic pathology and the clinical pathology of shock are well worked up (and he has ample evidence to back him up).

The author gives due credit to careful handling of the tissues, sharp dissection with minimum trauma, for being potent factors and largely responsible in preventing surgical shock. There is no doubt that Crile is one of the most gentle operators and expert technicians in this country today. Indeed, one of our greatest surgeons of the West has stated that to this fact are due the successful results in his work. To no one may Sir Berkeley Moynihan's quotation be more fittingly applied: "There are surgeons . . . who use the utmost gentleness and who deal lovingly with every tissue they touch. The perfect surgeon must have the heart of a lion and the hand of a lady."

Crile's "Anoci-Association" will prove a boon, the discovery of which, in anesthesia, is overshadowed only by Morton's epoch-making contribution. It may become a popular routine in some clinics, but in the majority it will be used only in selected cases. In the latter class it has its greatest field of usefulness.

One cannot fail to profit by the reading of this work, or to be convinced of the underlying truth of Crile's postulations. Crile's argument is philosophical, his reasoning sound and his enthusiasm boundless. There is no doubt that this book will be productive of much that is good in the manner of conducting surgical operations.

ROYALE HAMILTON FOWLER.

**ARTERIOSCLEROSIS.** A Consideration of the Prolongation of Life and Efficiency after Forty. By LOUIS FAUGERES BISHOP, A.M., M.D., Clinical Professor Heart and Circulatory Diseases, Fordham Univ., Physician, Lincoln Hospital. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C., London. Oxford University Press, 35 W. 32d Street, New York. Price, \$3.50.

The author of this book proposes a new theory of the causation of arteriosclerosis. He says: "My own belief is, that arteriosclerosis arises when the cells of the body become sensitive to particular proteins, and that these proteins create irritation, something in

the nature of anaphylaxis, and that if this is continued for a long period of time the result is changed in structure which constitute the disease known as arteriosclerosis." He hedges on that statement, however, when he refers to "auto-intoxication or accidental sensitization to proteins in causation" of arteriosclerosis; and says, "It is impossible to put aside at this time intestinal putrefaction, but we are willing to concede it as a factor in a rather complicated process," and, "There must be a decided relationship between persons suffering from arteriosclerosis and those with similar symptoms suffering from uric acid," and, "Let the individual escape the sensitizing accident or not eat the dangerous protein, and the disease may be avoided." The author fails to clear up the confusion between the effects on the production of arteriosclerosis of the "auto-intoxication" and the "uric acid," and the effects which he claims for "accidental sensitization to particular proteins." In fact, it may be inferred from the author's dietetic treatment, as described in the book, that the first two causes mentioned are sufficient to cover the whole field, and that the "accidental sensitization" is superfluous; for the essential thing in the author's dietetic treatment seems to consist in cutting out of the diet those articles which favor intestinal putrefaction and directly introduce uric acid. He describes his diet as follows: "The number (not quantity) of proteins, is reduced to a minimum. This is accomplished in a simple way. We can usually disregard the vegetable proteins, and by removing from the dietary meat, fowl, eggs, fish and stock soups, obtain a diet without positive objection. Then to remove the negative objection of an insufficiency of protein, we may put back into the dietary one protein that has, in general or in the particular person, proved safe. In severe conditions, where there is pain in the region of the heart, cheese is usually chosen. So the man is told to eat as freely as he wishes of bread and butter, vegetables, fruit and nuts, with cheese. Milk is allowed but not insisted on in large quantities." The author elsewhere says that the Battle Creek Sanitarium diet "comes pretty close" to his own idea of a satisfactory diet. His own diet, to which he applies the term "Few Protein," seems to be indistinguishable from what is generally known as the lacto-vegetarian diet. It is difficult to see how the good results which undoubtedly come from the use of such a diet support the author's "special sensitization" theory of arteriosclerosis, while they do supply evidence that intestinal putrefaction and ingestion of free purins are potent factors in its causation. Disregard quantitative regulation of the diet in arteriosclerosis is disregarded while emphasizing the necessity for qualitative regulation.

Some of the author's statements are ambiguous, as for example the following: "When we come to examine food we find that it is easily divided into two classes: The class in which cereal is most abundant, and the class in which protein is most abundant."

The book is enriched with extensive quotations. Out of the fifty-four pages of the chapter on "The Diet in Arteriosclerosis," thirty-three are given to a reprint of *The Bulletin on Cheese* (No. 487), of the U. S. Department of Agriculture.

One entire chapter of sixty-six pages is devoted to answers received from American physicians to letters sent to them by the author asking for their opinion on arteriosclerosis.

Scattered throughout the book are many valuable therapeutic suggestions, and some with which not everyone will agree.

The author says: "Diuretics which have a direct effect on the kidneys constitute a very crude form of medication, and in the long run are seldom of advantage."

He says: "It is surprising how little trouble any of those on this diet have with starch indigestion or flatulence."

He condemns the use of saline cathartics.

He advocates the use of chloral, particularly in enemas, when there is great hypertension. He gives this in repeated small doses over a long period of time.

He is a strong advocate of the Nauheim methods.

He says regarding the use of nitrites, that they "should be given whenever they are found experimentally to benefit symptoms, but are never to be used for the sake of lowering blood pressure that seems reasonable for the particular person."

Castor oil is his favorite laxative. He also speaks well of aloin, and says, "calomel and blue mass have served a good purpose when given every week or ten days in this chronic ailment."

He says of digitalis that it "is the trump card in the betterment of cardiovascular disease, and when it has been played the hand has to that extent been weakened, because there is no other drug that can take its place. . . . Boldly used at first till the heart is 'digitalized,' and with caution for months or years if necessary, it is one of the delights of medical art. Thus a gentleman under my care at the present time whose recovery under digitalis from what was supposed to be, and which in a legal paper has been certified to as, an absolutely fatal disease, is symptomatically well because he takes the infusion of digitalis equivalent to about a grain of the drug a day, and does not stop it at any time."

E. E. CORNWALL.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume II, Number V. (October, 1913); Volume II, No. 6 (December, 1913); Volume III, No. 3 (June, 1914). Philadelphia and London: W. B. Saunders Company 1913. Published Bi-Monthly. Price per year: Paper, \$8.00; Cloth, \$12.00. W. B. Saunders Company, Philadelphia and London.

Among the more interesting topics in the October Clinics are Ankylosis of the knee and hip, Osteitis Fibrosa Cystica, Idiopathic Dilatation of the Colon and a talk by Rodman, of Philadelphia, on Cancer.

The December number contains in part dissertations upon lesions of bones and joints, gall stones, undescended testicle and a talk illustrating Dr. Murphy's method of student instruction. It ends with an index to Volume II.

In the June issue, 914, the heading of an excellent talk on diagnosis is rather startling. Above in small print is reproduced a letter from his students expressing appreciation for the course given them by him during their senior year. This letter is read in the clinic when an interlocutor shouts "What's the matter with him (Murphy)?" The class: "He's all right." This is simply a matter of unwise editing. It seems somewhat undignified to permit its publication.

These volumes reflect Dr. Murphy's usual enthusiasm and may be properly considered among the best efforts of his mind and pen.

No critic but a Murphy possesses the necessary temerity to pass judgment on such an array of papers as these and there is but one Murphy.

ROYALE H. FOWLER.

TREATMENT OF NEURASTHENIA. BY PAUL HARTENBERG, M.D., translated by ERNEST PLAYFAIR, M.B., M.R.C.P. Edinburg, Glasgow and London. Henry Frowe and Hodder & Stoughton. Oxford University Press, 35 W. 32d St., New York, 1914.

Works on Treatment should, of course, be prepared by those who have had ample experience. The writer of this work of 283 pages claims fifteen years to his credit. He is a practitioner in Paris.

Despite the title, it fairly covers the whole subject of Neurasthenia,—definition, causation, examination, etc., barely half the work being directly devoted to Treatment. He separates Psycho-Nervous Affections

from Neurasthenia, though recognizing that they frequently concur.

In the brief twenty-six line preface the forms "I," "me," and "my" or "myself" are used thirteen times. Here he also says: "I have tried, and experimented with, every form of treatment, ancient and modern, every drug, every physical agent." He is sure that he has "finished by appreciating each process, each substance, at its true value,"

Yet, despite such peculiarities, it is an excellent, and so far as its space permits, a most commendable work. Even the sexualist can find something in his line. The details of his plan of handling such work and the patient as well as the disorder are given with clearness.

FEVER—ITS THERMOTAXIS AND METABOLISM. BY ISAAC OTT, A.M., M.D., Professor Physiology Medico-Chirurgical College, Phila.; Member American Physiological Society. 166 pages, 14 illustrations. Paul B. Hoeber, New York City, 1914. Price, \$1.50 net.

Three lectures, delivered at the Medico-Chirurgical College, are here printed in a book. The experience (or better, the experimentation), of Professor Ott for forty-five years has served to convince him of certain truths as to the production of fever in the human body, and he discusses the subject in a thorough and masterly way, giving authorities and experiments to support his many interesting conclusions. A small but valuable book.

## Deaths

ROBERT G. CORNWELL, M.D., Riverhead, died September 16, 1915.

GEORGE EDWARD CRAGIN, M.D., Kenwood, died September 8, 1915.

AUSTIN FLINT, M.D., New York City, died September 22, 1915.

P. VAN BENSCHOTEN FOWLER, M.D., Centre Moriches, died September 14, 1915.

GEORGE W. HACKETT, M.D., Ceres, died August 11, 1915.

WILLIAM HOLLINGER, M.D., Newburgh, died August 19, 1915.

A. V. JOVA, M.D., Newburgh, died September 20, 1915.

KENNETH F. JUNOR, M.D., Brooklyn, died September 26, 1915.

F. W. MALONEY, M.D., Rochester, died August 23, 1915.

JOHN CHARLES MALONY, M.D., Dundee, died August 1, 1915.

WILLIAM S. MORRIS, M.D., Utica, died August 25, 1915.

JOHN E. SHEPPARD, M.D., Brooklyn, died September 13, 1915.

E. D. SKINNER, M.D., Mineola, died September 21, 1915.

JOHN H. TAYLOR, M.D., Holley, died September 23, 1915.

REUBEN W. VAN DYKE, M.D., Malone, died August 11, 1915.

# NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

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## EDITORIAL DEPARTMENT

### A PHANTASY.

IF there were developed within the brain a distinct body from which would arise the good and evil impulses of our nature and if by some means we could remove that portion from which emanate the evil impulses what a delightful world this would be. However, we must live on with our good and evil inclinations performing all sorts of psychic phenomena.

We do not know whether or not it was Dr. Bayles' good or evil impulse which led him on account of the impoverished state of his patient to endeavor to secure from Dr. Beebe advice and medicine with which to treat his patient. If Dr. Beebe believed his advice and medicines possessed a commercial if no other value, no one can question the legal right of Dr. Beebe's refusal to comply with Dr. Bayles' request. A man's generosity or lack of generosity possesses but a sentimental value. Maybe Dr. Bayles expected too much in asking both matter and sentiment from Dr. Beebe. The following correspondence will assist you in determining wherein both correspondents were perhaps disappointed.

Brooklyn, N. Y., November 4, 1915.

MY DEAR DR. MAC EVITT: Referring to the letters from Dr. Beebe which I sent you, I would say that they were in answer to my inquiry concerning Autolysin. Always feeling it my duty to use any and all means which seem to have merit, I wrote Dr. Beebe for information concerning the treatment and cost of Autolysin. At

the same time I told him that the patient was suffering from carcinoma of the rectum, that the diagnosis had been confirmed by more than three physicians, and that Dr. William A. Downes, of New York City, had considered it inoperable; also that the patient was a man of very moderate means.

The reply did not refer to the expense, so I answered immediately, desiring to know the price of the remedy. He answered by requesting a consultation, the fee of which would be \$100. As there could be no question of diagnosis, a consultation and fee for same was absolutely unnecessary.

His action caused me to drop the Autolysin preparation forthwith.

Trusting that you will now thoroughly understand what led up to the letters from Dr. Beebe, I am,

Very truly,

H. B. BAYLES.

New York City, October 13, 1915.

DR. HAVENS B. BAYLES, Brooklyn, N. Y.

DEAR DOCTOR: We have your favor of October 12th and we note that you have a patient 65 years old afflicted with malignant disease of the rectum, which you are anxious to have receive the benefit offered from this method of treatment.

We observe the short clinical notes pertaining to this patient and feel that we would be offering you the best advice, that for your own reputation and the welfare of the patient that you should first receive personal instruction from us in the technique of the administration, as well as the after care of the patient before undertaking its administration.

If your patient is able to be brought here for examination, consultation, we would suggest this course. However, if the patient cannot make the trip then we

would suggest that a member of the staff see this patient in consultation with you and give you personal instruction and get you well started in the treatment.

Trusting this is satisfactory to you, we beg to remain,

Yours very truly,

S. P. BEEBE, M.D.  
Per F.

New York City, October 14, 1915.

DR. HAVENS B. BAYLES, Brooklyn, N. Y.

DEAR DOCTOR: Your letter of the 14th inst. just received and contents very carefully noted. We observe that you have not discussed with your patient your desire to have him receive the advantages of the Autolysin treatment. Neither are you at all sure that he knows that he is suffering from malignant disease.

In reply to your inquiry as to the cost of the treatment, we beg to state that the fee for consultant, seeing a case with you at this office, will be \$100. The after treatment will be arranged to your own satisfaction.

I might say, in passing, that the laboratory charges us \$24 for one dozen ampules, which is practically \$2 per dose.

Yours very truly,

S. P. BEEBE, M.D.  
Per F.

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### EXPELLED FOR FEE-SPLITTING.\*

THE first trial of a member of the Missouri State Medical Association on a charge of fee-splitting and offering to split fees was held recently by one of our component societies. The offender was found guilty by the board of censors and expulsion recommended. The report of the censors was adopted by the society and the sentence carried out. The expelled member was also a Fellow of the American Medical Association, which affiliation he loses.

In attacking some evils the best way to abolish them is to apply the whole force of our strength against them at the outset. This was done in the agitation against fee-splitting; the practice immediately decreased in all parts of the state where it had been prevalent and has disappeared altogether in some places where it had threatened to gain a foothold. We need not expect, however, that simple threats to punish offenders or prohibitory resolutions and laws will efface this blot on our escutcheon. We must do more than that—we must drive out of our ranks those who persist in dishonoring their profession and deceiving their patients.

It is now three years since the association adopted the by-law against fee-splitting and the

case mentioned above is the first prosecution for violation of the section. This seeming indifference is due not to the inactivity of the officers of the association but to the fact that it has been difficult to obtain evidence supported by competent testimony. This evidence must, of course, come from some member who has knowledge of the offense and will produce documentary proofs to substantiate the charge—a step that is offensive and repugnant to the finer feelings of the honest practitioner. Therein lies the grip of the fee-splitter. Having Oslerized his own sense of honor by avarice and the greed for gold he gambles with fate against exposure by men of purer motives and higher ideals. But conditions are rapidly changing. The fee-splitter is finding himself ostracized by the respectable men in the organization and these men are beginning to understand that the only way to purify our ranks is to expose and punish offenders.

The trial and expulsion of the guilty member referred to above is a warning to others that an awakened profession will purge itself of members who defy the traditions and lower the tone of our profession.

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### WHEREIN DANGER LIES.

The recent arrest of a physician residing in New Jersey on the complaint of a woman patient that he had committed a criminal assault on her, goes to show the danger to which physicians are exposed through the machinations of blackmailers or the delusions of neurotic women, unless they surround themselves with adequate protection against false accusations. Of the innocence or guilt of the accused physician in this particular case we are not in a position to write, but sincerely hope that for the sake of the profession of which he is a member, he will be able to completely refute the charge so that not the slightest doubt will remain of his absolute guiltlessness.

An unblemished reputation, honor and esteem, won by long years of self-sacrificing work are in a moment swept away by a false accusation, and the accused becomes an object of scorn until he can establish his innocence of wrong. This result achieved, he is not entirely restored to his former high estate in the community, for skepticism and the proneness to think evil rob him of a possession beyond complete restoration.

\* Published through the courtesy of Dr. E. J. Goodwin, Editor of the *Journal of the Missouri State Medical Association*.



## Original Articles

### THE PATHOLOGY OF SYPHILIS.\*

By JOHN A. FORDYCE, M.D.,  
NEW YORK CITY.

**I**N order to successfully combat the syphilitic invasion it is important not only to be informed as to the possibilities of the therapeutic agents but to have a thorough knowledge of the nature of the infection; the reaction which it calls forth in the tissues and the resulting changes which follow.

It must be borne in mind that during and even before the secondary period of the disease the organisms are in the general blood and lymph streams and locate themselves at this time about the nutrient vessels of the aorta, in bone, in the central nervous system, in the glomeruli of the kidney or in other viscera. The special tissue selected by the spirochætes may be purely accidental or possibly may be governed by affinities for the strain. While confirmatory laboratory evidence up to now is far from satisfactory, there are certain clinical reasons for the belief that special strains have different invasive powers and may limit their activities to one set of tissues. Patients with syphilis of the nervous system, as a rule, deny the secondary rash. The subjects of extensive skin syphilis are not often afflicted with nerve syphilis and patients with luetic osteitis and periostitis are not so often afflicted with skin lesions. The important factors to be kept in mind are the possibilities of the disease in the secondary period as related to the destructive and incurable lesions which manifest themselves years afterward.

If spirochætes are deposited about the vasa vasorum of the aorta in the secondary period of syphilis they may yield to the natural defenses of the body or be reached by specific drugs. They may be completely destroyed or their activities only delayed by imperfect medication. In the latter case it may be years before the changes in the aortic walls are sufficiently advanced to cause symptoms or physical signs. When such changes are recognizable it may or may not be possible to influence the condition by specific treatment. The early inflammatory reaction about the vessels has produced sclerosis of the aortic wall and to these changes is added the mechanical action of the heart on the weakened walls of the vessel.

The same holds true of the central nervous system. Investigations during the past twelve years have shown that the nervous system is invaded early in the disease, probably at the time of the spirochætemia, that a meningitis is produced which may manifest itself clinically

during the secondary stage, or remain latent for a long period, or prepare the soil for an extension of the process or new invasion in later years. It has been estimated by different workers that involvement of the central nervous system in the secondary stage takes place in from 20 to 80 per cent of patients as shown by abnormal findings in the spinal fluid. My own opinion is that although single abnormalities, as an increase in cells or globulin, may be present in many early cases they are only transient manifestations and that probably no larger percentage of luetic individuals show all phases positive in the spinal fluid than later develop frank disease of the nervous system. In a series of punctures made on my clinic and hospital cases with early secondary lues less than 20 per cent evidenced any abnormality. Whether, as Nichols has suggested, we are dealing in nerve syphilis with a specially invasive strain of organisms or whether the choroid plexus acts as a filter or barrier to the spirochætæ I am not prepared to say. Analogies are found in tuberculosis and typhoid fever, in both of which diseases the organisms circulate at times in the blood, but only rarely are present in the spinal fluid.

In human syphilis inoculation is followed either by a local reaction at the point of entry of the organisms or the spirochætæ gain access directly to the blood and lymph stream without producing any demonstrable change in loco. In the first event the organisms find lodgement in the interepithelial lymph spaces and from here reach the perivascular lymph spaces, where after becoming acclimated to changed nutritional conditions they multiply. Even now a reaction is taking place on the part of the fixed connective tissue cells in this vicinity which increases in intensity until the height of the second incubation period with the full development of the chancre. The macroscopical appearance is varied. In one case only a herpetic lesion may be present, in another a papule or a slight erosion and again the classical Hunterian chancre, or its clinical characteristics may be entirely masked by a pre-existing chancroid or other cutaneous lesion. It is difficult to say whether this multiformity is dependent upon the immunity mechanism of the patient, the number of organisms, or upon the strain of the spirochætæ. Noguchi found certain definite differences in the morphological character of different strains isolated. This led him to divide the various specimens into the thicker and thinner forms and an average or normal form, the last being the most common and frequent. He found that the lesions in the testicle of the rabbit differed according to the variety inoculated, consisting either of a diffuse or a nodular type. Nichols also found that a strain isolated by him from the central nervous system presented different biological properties, without being

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

in the strict sense of the word neurotropic. He applied to this strain the quality of invasiveness, based on the production in rabbits of lesions of the scrotum and testicle which were hard and necrotic in the center, and a generalization of the infection as evidenced by lesions of the eye and skin. The organisms were thick in form and had a short incubation period corresponding to the thick type described by Noguchi. These results are of particular interest in view of the occurrence of syphilis of the nervous system in individuals infected at the same source, and the not unusual occurrence of conjugal and familial syphilis. The attempt of Jakob and Weygandt and others to produce a neurotropic strain in rabbits has not given uniform results, some rabbits showing a pathological condition of the nervous system; others not. Noguchi came to the conclusion that it was necessary to previously sensitize the animal in order to obtain involvement of the nervous system.

Just how soon after inoculation in the human subject the spirochætæ reach the satellite lymph nodes and the general circulation has not been definitely determined. Truffi claims to have found them in the nodes one and two weeks after infection. It has been demonstrated by animal experiments that the bone marrow and the testicle contain them before the appearance of the chancre. The spirochætæ *pallida* is essentially a lymph organism, but its generalization takes place in the early period through the blood stream, and from time to time it probably appears in the blood in the later stages of the disease. It has been recovered from the general circulation before the outbreak of the secondary exanthem, during the florid period, and in cases of latent syphilis.

There is now a widespread belief that with the dissemination of the parasites in the early period of the disease every tissue is invaded without, however, in all cases producing subjective or objective symptoms. It has been demonstrated that spirochætæ may remain in contact with tissues for long periods of time without exciting microscopical or macroscopical changes. Our knowledge regarding visceral involvement at the time of generalization is rather limited, but it is quite probable that lesions analogous to those found in the skin are present. As in these cases the interstitial tissues would more probably be involved, the lesions are superficial, tend to undergo spontaneous regression, and disturbance of function is therefore slight. Where, however, the intoxication is severe and analogous to that of the eruptive fevers the parenchymatous portion of the organs is affected leading to more or less degeneration and destruction with consequent impairment of function.

It was formerly believed that the sequence of syphilitic eruptions was dependent upon the

parasite and its virulence, but the relationship is no longer admitted. Modern research has interpreted the various manifestations as an expression of the immunity processes which begin to develop shortly after the introduction and multiplication of the organisms. Clinical and animal experiments have demonstrated that during the first incubation period a change is taking place in the skin and mucous membranes which renders them resistant to reinoculation under ordinary conditions. This biological change to which the name anergy has been applied by Neisser begins within a few days of the initial inoculation and is practically complete at the end of the second incubation period or time of the general eruption. If during this period reinoculation is practiced it is found that the inoculation period is shorter and that the lesion no longer develops in a typical manner. These phenomena are analogous to those described by von Pirquet under anaphylaxis.

Now, although super-infection is rare in the secondary stage, the immunity is found to be only relative for if large amounts of the virus are inoculated deep under the epidermis a lesion, although insignificant, will follow. The tissues are therefore in a state of diminished susceptibility. If reinoculation is attempted in the tertiary stage, after a short incubation period a lesion of the tertiary type will be produced. This illustrates the "immediate reaction"—with an altered tissue reaction in the direction of hypersusceptibility. The pseudo-chancere or chancere redux is believed by many to be a reinoculation chancere occurring in the tertiary period and due to a new strain, although spirochætæ are not usually demonstrable in these lesions. With other clinical observers I take issue with this view as in my opinion the so-called chancere redux is a gumma occurring at or near the location of the original chancere. This is illustrated in the case of a patient who developed a hard nodule, not gummatous in type, in the median line of his upper lip at the site of an initial lesion which he had eight years previously.

It may be said that in general the features of the pathological anatomy of syphilis are the same wherever encountered in the body, subject only to modifications by the tissue affected, namely, a granuloma having its origin in the perivascular lymphatic spaces.

The chancere shows in its very early stages a new formation of capillaries with an infiltration about these and the pre-existing ones of lymphocytes and plasma cells. If a lesion is examined in the early stages the infiltration is found sharply limited; in the later stages it is diffusely scattered throughout the corium. The endothelium of the capillaries is swollen and proliferated so that the lumen is narrowed or altogether occluded and in the larger vessels with an external coat there is an increase in

thickness. Sometimes giant cells are found. The epidermis suffers secondarily and presents a varied picture such as atrophy, hypertrophy, erosion or ulceration. From the newly formed granulation tissue connective tissue is formed which later scleroses and leads to fibrosis. With the interference of the nutrition regressive metamorphosis takes place.

Secondary syphilis is characterized by a succession of eruptions.

The roseola or macular syphilide shows very few changes under the microscope. There is an erythema with dilatation of the vessels of the papillæ and subjacent corium with a sheathing of lymphocytes and plasma cells.

The papular or lenticular syphilide consists of a circumscribed lesion in the cutis made up of lymphocytes, plasma cells and fibroblasts, with the characteristic changes in the blood vessels. In lichen syphiliticus the process is closely confined to the pilosebaceous apparatus, extending into the corium along the hair follicle. These lesions usually show an abundance of giant cells.

The epidermis in secondary syphilides shows secondary changes. With edema there is a hyperplasia or acanthosis with parakeratosis or scaling. With pressure from the infiltrate there is thinning. In condylomata, owing to the excessive moisture, there is a marked papillomatous development. In pustular and suppurating syphilides extraneous inoculation with pyogenic organisms has taken place.

The pigmentary syphilide or leucoderma syphilitica owes its clinical features to chromatophores, the pigment passing from them to the basal layer of the epidermis.

Secondary syphilides usually undergo spontaneous involution. Microscopic residua may, however, persist for a long time and are probably evidence of the persistence of spirochætæ in these situations. It has been suggested that local relapses take place from these remnants, and this, of course, could only occur in the presence of organisms.

The gumma represents the type of lesion of the tertiary period. It shows the characteristic changes of endarteritis and panarteritis of the vessels, new formed as well as old, and an infiltration made up of lymphocytes, plasma cells, giant cells and proliferated connective tissue cells. The lesions of this stage differ from those of the earlier period in their destructive character. The tissue undergoes caseous degeneration in the center or it may be fatty or mucoid. The necrotic tissue is absorbed or discharged, resulting in the formation of cicatricial tissue.

The tubercular or nodular syphilide is a gumma situated more superficially in the corium. The serpigenous lesions of the tertiary period consist of nodules about the cutaneous vessels, of which a marked feature

is thrombosis. The progressive character of the lesion may be due to this peculiarity.

*Lymph Nodes.*—Enlargement of the lymph nodes, especially regional, in connection with the chancre is with the latter one of the earliest objective symptoms of syphilis occurring usually in one or two weeks. Although general adenopathy is one of the characteristic features of the secondary stage, it is frequently absent or so insignificant as to be overlooked. It is the expression of the general infection and is not proportional to the severity of the disease. It is usually transient, responding promptly to treatment. In the tertiary stage a condition is sometimes met with simulating Hodgkin's disease. Such a case came under my observation with the following history: A man 40 years old developed in 1890 a chancre followed by secondaries. In 1895 he had fever, an enlarged spleen and swollen lymph nodes of the neck; a node beneath the lobule of the ear broke down. In 1905 he suffered from a relapse and improved under specific treatment. In 1910 he had another relapse and in 1911 the nodes of the left groin and axilla also enlarged. He had several febrile attacks, with a temperature of 103 degrees. His Wassermann reaction was positive. Under treatment the lymph nodes and spleen were markedly reduced; his temperature became normal and he gained in weight.

In the later stages of syphilis amyloid degeneration of the lymph nodes is also found as part of the general process.

*Salivary Glands.*—In the secondary period there is sometimes tumefaction of these glands, especially the parotid, resembling mumps. Several years ago a patient in the tertiary stage of syphilis consulted me for a diffuse hyperplasia of the parotid glands, the so-called Mickulicz's disease. He was thirty years old, infection dating back eight years. He had a marked interstitial glossitis that manifested itself by an enormous enlargement of the tongue with deep fissures and patches of superficial leucoplakia. There was a perceptible swelling of both parotids. Thus consistency was increased, the sensation imparted to the finger being harder than that of the normal gland. They were not tender. Under mercurial treatment the enlargement of the tongue gradually subsided until it assumed practically normal dimensions. The patches of leucoplakia and some atrophy remained. The enlargement of the parotid glands slowly regressed, but the impression made on them by the specific medication was slower than on the tongue lesions.

*Oesophagus.*—Occasionally the oesophagus is the seat of ulceration consequent upon a gummatous process. The lower portion appears to be the more favorite location, and suffers from stenosis in consequence of cicatricial healing.

*Stomach and Intestines.*—Little is known of

an acute syphilitic gastritis, although it has been described. Virchow was the first to describe a chronic gastritis, the walls of the stomach showing a small round-celled infiltration and an increase in connective tissue. According to Neumann it is the most frequent manifestation of visceral syphilis occurring during all stages. Chiari found in 243 post mortems upon syphilitic subjects only two with definite stomach lesions. Gummata occur occasionally, usually affecting the intestine, either as circumscribed or diffuse lesions. The relation of syphilis to gastric ulcer is interesting as well as important. Lang believed syphilis to be the etiological factor in twenty per cent of cases of acute round ulcer resulting from syphilitic endarteritis, while the opinion of other authors is that ulceration is never produced except as the result of necrosis of a gastric gumma. My own experience with ulcers of the stomach and intestine is limited to a few cases referred to me by my professional colleagues in which the diagnosis had been made and in whom the Wassermann was positive. The direct proof of the connection of gastric and intestinal ulcers with syphilis is difficult to obtain, and we base our knowledge mainly on the presence of a positive Wassermann. There is no way, in my opinion, of making a differential diagnosis between specific and non-specific ulceration of these organs. The treatment of such cases, of course, is that of ulcer in general, with the added antisyphilitic therapy. Just how much credit for the cure to give to the latter is problematical. The duodenum may suffer with the stomach, and such a case has been under my care. The lower part of the jejunum and the ileum appear to be the region most frequently attacked along the course of the small intestine. Both acute and chronic enteritis have been described, but the most important lesion is ulceration with its sequelæ. The gummata themselves are rarely seen. The ulceration terminates in perforation or cicatrices involving the greater part of the bowel and thickness of the wall so that more or less stenosis and sometimes obstruction ensue. Amyloid degeneration is also met with in the intestines.

In the large intestine the colon alone is sometimes the site of the disease, but it is the rectum that is especially liable to involvement, more so in women. Orth has referred this to infection by the secretion from the vulva. While chancre of the rectum occurs sometimes, ulceration from

breaking down of a gumma is the commonest lesion. The loss of substance is frequently extensive and circular, so that marked stenosis results. It is usually in this stage that the patient first seeks advice, as the active lesion produces few symptoms. Perforation of the ulcer into the pelvis or vagina may take place. Periproctitis is common, and the pelvic peritoneum may be greatly thickened. There may be such an increase of pelvic fascia as to simulate a tumor.

*Pancreas.*—Syphilitic disease of the pancreas is rare. In adults pancreatitis is more common than gumma occurring as an induration similar to syphilitic cirrhosis of the liver with which it is almost always associated. It may cause a palpable tumor in the epigastrium and by compression of the pancreatic ducts and common bile duct give rise to characteristic stools and jaundice. Rolleston reported syphilitic obliteration of the bile ducts associated with an extreme interstitial pancreatitis. The accompanying illustration is from a case at the City Hospital, the patient, before death, developing a marked jaundice

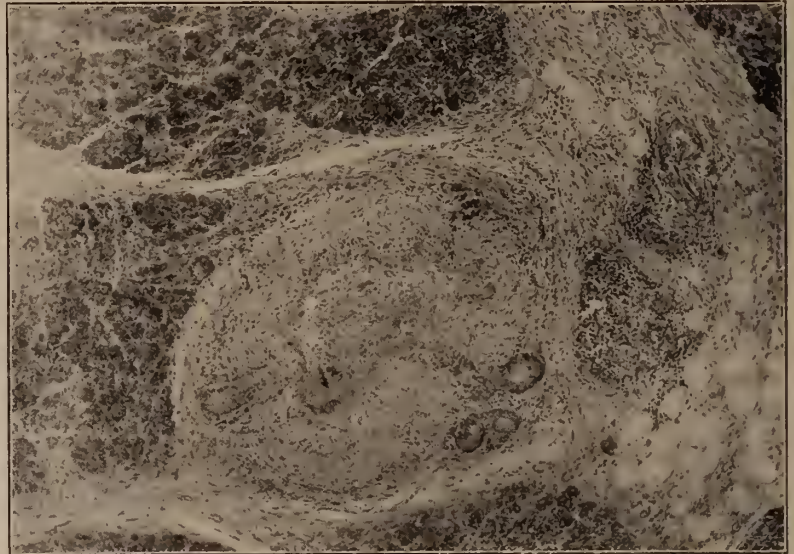


FIG. 1.—Interstitial pancreatitis with replacement fibrosis.

from obstruction of the common bile duct. At autopsy an interstitial pancreatitis (Fig. 1) and syphilitic hepatitis were found.

Dr. John H. Larkin, Director of Laboratories of the Department of Charities, New York City, has in his collection an unusual example of hemorrhage in the head of the pancreas obtained from a case with the following data: A man, aged forty-nine, with a definite syphilitic history. He had been under treatment for the past one and one-half years. He entered the hospital one year ago complaining of acute gastric pain radiating around the abdomen to the back and accompanied by depression and a feeling of exhaustion. After a rest in bed and

under opiates for three weeks he gradually recovered. Two months later he re-entered the hospital with an attack of acute gastric pains, followed by severe depression and evident bleeding from some point. He failed to recover and died exsanguinated.

*Liver.*—Jaundice occasionally appears at the time of the cutaneous outbreak in the early secondary stage, the process in the liver probably being analogous to the one in the skin and giving rise to a catarrhal cholangitis. This sometimes develops into acute yellow atrophy. Rolleston collected twenty-eight cases of acute yellow atrophy in which syphilis was the etiological factor. It is characterized by an acute parenchymatous degeneration running a rapid course and resulting in death. As to the incidence of syphilitic involvement of the liver, Flexner's analysis of 5,088 autopsy reports showed interstitial hepatitis in 42, perihepatitis in 16, gummata in 22, amyloid degeneration in 70 and syphilitic scars in 38.

Gummata may occur singly, but it is more usual to find them multiple. As they more frequently occur on the anterior surface at the junction of the right and left lobes, the condition is often diagnosed during life. They usually undergo caseation with replacement fibrosis and depending on the size and extent scarring and deformity. In diffuse interstitial hepatitis the parenchyma is involved secondarily. In congenital syphilitic a reaction is met with in both types of tissue. As the infection takes place through the portal vein the spirochæta may reach the liver cells through the lymphatics. A diffuse hepatitis terminating in pericellular cirrhosis is most characteristic.

*Spleen.*—During the eruptive stage the spleen is often enlarged and by many authors this is considered a constant concomitant of secondary syphilis. Sometimes fever and anemia are associated. In the later stages splenitis with increased connective tissue with subsequently cicatricial contraction and a decrease in size is sometimes seen. Perisplenitis is frequently met with in cases showing other evidence of syphilitic infection and in congenital syphilis. In the tertiary stage single or multiple gummata may be found. They may attain a very large size and occur in connection with those in the liver. Scarring and fissuring result. Amyloid degeneration occurs diffusely or is limited to the Malpighian bodies. It is usually met with in old cases and especially in those with disease of the bones and the rectum. A syphilitic leucæmia is sometimes encountered. Hereditary syphilis is probably the commonest cause of splenomegaly.

*Trachea and Bronchi.*—Syphilis of the trachea and bronchi is insignificant in the early stages being of the nature of a catarrh. In the later stages gummatous involvement gives rise to a serious condition, as ulceration takes place

in a large percentage, and with perforation of the trachea or bronchus or large blood vessels fatal hemorrhage results. In other cases scarring and contraction leads to a stenosis. Connor reported a fibrous peritracheitis, the trachea and bronchi being surrounded by a dense mass of connective tissue, which not infrequently involves the recurrent laryngeal nerves. These lesions probably begin as gummata of the lymph nodes between the trachea and esophagus. Syphilis of the lung is sometimes associated.

*Lung.*—Pulmonary syphilis is very rare and is not often recognized clinically. From the autopsy reports of the Johns Hopkins Hospital, according to Osler, the lungs were involved in only 12 cases out of 2,500, and according to Fowler only 12 such specimens were found in the London Museum and two of these were doubtful. In the acquired form of syphilis it occurs as a broncho-pneumonia, chronic interstitial pneumonia and gummata. In congenital syphilis so-called white pneumonia is the usual form.

*Kidneys.*—Syphilitic affections of the kidney occur during the early secondary as well as the late stage of both acquired and congenital forms of the disease. At the beginning of and during the early secondary stage it is not uncommon to find transient albuminuria which may be unusually intense in the absence of other symptoms as edema or disturbance of the general nutrition. The urine may be loaded with albumin for weeks or months without developing signs in proportion to its intensity. According to Fournier, acute nephritis occurs in less than one per cent of the cases: Spier places the estimate at four per cent. All the different varieties of acute and subacute nephritis may occur during the course of the disease. These cases terminate in recovery or pass into a chronic tubular nephritis resulting in large white kidney, with the secreting structures chiefly involved. This type is very much like scarlatinal nephritis. It has been thought that the albuminuria and acute nephritis were due to the exhibition of mercury, and while it is unquestionably true that large doses will damage the kidney, its careful administration is usually without deleterious effect. The same is true of salvarsan.

In the later stages of syphilis nephritis is more common, and acute and chronic parenchymatous and interstitial as well as amyloid kidney are seen. The last two are the more frequent. In interstitial nephritis the organs are small and often irregular from cicatricial contraction. There is a great increase in the connective tissue of the kidney and the capsule, and the tubules are obliterated by compression. A marked endarteritis is present, the walls of the vessels being greatly thickened. Gummata are uncommon and usually occur as multiple lesions situated in the cortex or pyramids. They are attended by few

symptoms, and the condition is not often diagnosed during life. A large solitary gumma may cause some confusion with a malignant growth. In congenital syphilis there is usually defective development of the kidney. In older subjects amyloid disease is frequent. Payne believed the granular kidney occurring in early youth was traceable to inherited syphilis.

*Ureter.*—Syphilitic affections of the ureter are extremely rare.

*Bladder.*—The bladder is not often involved, although gummata and ulceration have been described.

*Urethra.*—The urethra may be affected by syphilis in any stage. It is most common in the primary period when the infection may be inoculated at the meatus or in the fossa navicularis, often concomitantly with gonorrhœa, and the specific nature of the trouble overlooked. Mucous patches develop sometimes and in the tertiary stage a diffuse gummatus inflammation with phagedena is more usual than the solitary gumma.

*Testicle.*—Although it has been shown from animal experiments that testicular tissue is one of the sites of election of the spirochætæ in early syphilis, symptoms referable to an orchitis in the secondary stage are rare indeed. In the later stages a diffuse interstitial inflammation (Fig. 2) or a localized gummatisis is

he found an enlarged sclerotic prostate which under the microscope showed an hypertrophy of all its elements. Several other cases have been published but their syphilitic etiology is not convincing as the patients also had had a gonorrhœal infection. In Groszlick's case the prostate was swollen to the size of a fist and became normal under mercury and iodides after a month. A few months later a relapse occurred which again yielded to antisymphilitic treatment.

*Epididymis.*—In the epididymis syphilitic inflammation attacks the head of the organ which is free from pain in contradistinction to gonorrhœa when the tail first and soon the entire epididymis is involved with marked clinical symptoms. The nodules often disappear spontaneously.

*Heart and Vascular System.*—In syphilis of the heart the pericardium, endocardium or myocardium may be involved. It may exhibit itself as a hyperplastic infiltration or a gummatus inflammation with the attendant sequelæ. Syphilitic pericarditis usually manifests itself as a fibrous pericarditis involving only a small area or the greater part of the sac. Gummata are rare but have been met with as miliary lesions scattered over the surface. Syphilitic endocarditis in contradistinction to disease from other causes is only rarely found on the valves, affecting chiefly the left ventricle and the septum. Usually only one valve is attacked at a time and generally only one cusp. In the myocardium both fibrous and gummatus myocarditis occur resulting in a weakening of the cardiac wall, hypertrophy and dilatation. Sudden death in patients suffering from cardiac syphilis is frequent.

The blood vessels throughout the body bear the brunt of the syphilitic infection, as the lesions originate in or about them. Disease of the arteries is very frequent and of serious import. Of the larger arteries aortitis is the most important and grave, being responsible for about 75 per cent of cases of aortic insufficiency in adults, a large

number of cases of dilatation and aneurysm, a certain group of cases with angina pectoris and a persistent positive Wassermann in many cases of so-called latent syphilis. Owing to the frequency and the insidiousness of the condition all patients should be examined for the possibility of its presence. It is exceedingly difficult of diagnosis in its early stages

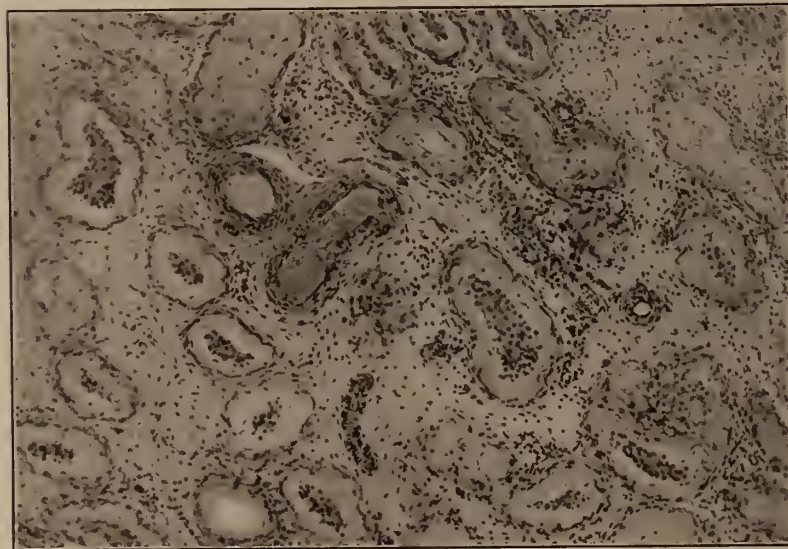


FIG. 2.—Diffuse syphilitic orchitis with increased connective tissue and hyalin degeneration of the tubules.

found. There is usually a co-existence of both conditions with a preponderance of one or the other.

*Prostate.*—Very little is known of prostatic involvement in syphilis and the reports in the literature are very sparse. Power records the case of a man, aged fifty-four, with gumma of the testicle and other signs of syphilis in whom

—as objective and subjective symptoms may be entirely absent with a circumscribed lesion in the arch or ascending part of the aorta and the radiograph is usually negative. It is only later when more or less damage has been done to the arterial wall as the result of sclerosis and dilatation that symptoms referable to the condition manifest themselves. The site of election is in the ascending portion near the valves, from which point the process spreads to the valves themselves, and the arch. The thoracic portion of the descending aorta may also show patches of sclerosis and in extensive cases is always involved, the abdominal aorta rarely so. Grossly the aorta has a characteristic appearance. Its inner surface is wrinkled and puckered with radiating ridges and sclerotic depressions between. Depending on the extent and age of the lesion there is more or less dilatation which may be uniform or fusiform, or there may be simple aneurysmal pouchings or a true saccular aneurysm. The wall of the aorta may therefore be found thin and translucent in spots, while it is dense and cartilagenous in others. The intima usually undergoes secondary hyperplasia and preserves its glistening appearance. Microscopically the affection has its origin in the vasa vasorum. These vessels show a thickening of their walls and a sheathing of lymphocytes and plasma cells. The disease invades the media where the histological picture of miliary gummata is encountered. A characteristic feature of syphilitic aortitis is the fragmentation and ultimate destruction and disappearance of the elastic tissue. The clinical symptoms depend upon the location of the lesions.

Syphilis of the vessels may involve the adventitia only in the condition known as periarteritis. This is the result of extension from the surrounding tissues, and occurs especially in the cerebral arteries. The condition is known as a nodular periarteritis, and involves particularly the circle of Willis with nodular tumors in conjunction with gummatous meningitis or with numerous large gummata. An acute gummatous arteritis involving all the coats of the vessel is found in the neighborhood of gummata or independent of them. Perforation sometimes results. Obliterative endarteritis is common in the small and medium vessels with or without thrombosis. In the extremities this will give rise to intermittent claudication and sometimes gangrene. In the brain transient paralysis, monoplegias and hemiplegia.

*Suprarenals.*—In acquired syphilis anyloid degeneration is not uncommon. Interstitial changes also occur, as well as diffuse or focal gummatous inflammation. In congenital syphilis spirochætae are especially abundant, even in the absence of histological changes. It is not seldom that true gummata are encountered and they are then of the miliary type.

The accompanying illustration of gumma of the suprarenal (Fig. 3) in acquired syphilis is from a preparation made by Dr. John H. Larkin, who kindly permitted me to have it reproduced. The patient presented clinically the symptoms of Addison's disease. Jacquet and Sezary also published the case of a syphilitic patient with signs of Addison's disease which yielded to specific treatment. Two months later the man died from cerebral hemorrhage. The suprarenals were found enlarged and fibroid and contained spirochætae.

*Thyroid Gland.*—It is estimated that about one-half of the cases of early syphilis show swelling of the thyroid. Gummata are the condition best known, though they are rare. They may occur in both the new-born and in adults. In a case under observation by me a woman, of about fifty, suffered from a gummatous infiltration which also involved the overlaying skin. There were no symptoms referable to the gland.

*Pituitary Body.*—Little is known of the in-

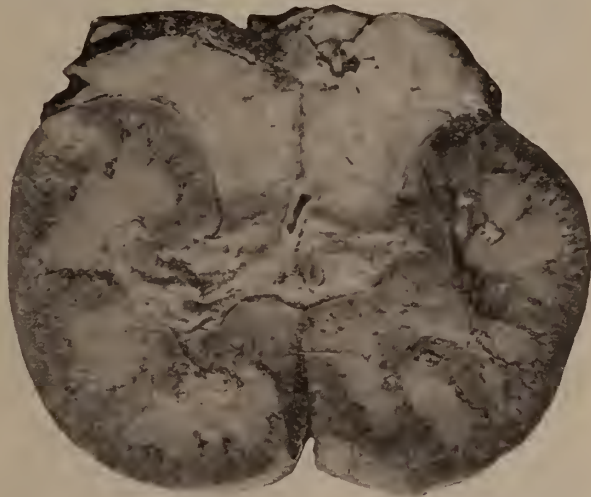


FIG. 3.—Gumma of the suprarenal body.

volvement of this gland in the syphilitic process, except in the tertiary stage, when hypophyseal gummata have been met with accompanied by symptoms of glycosuria.

*Nervous System.*—Although there is frequently a combination of processes, it is perhaps convenient to divide the pathological changes which occur in the central nervous system into a chronic hyperplastic inflammation, a gummatous inflammation, disease of the blood vessels and parenchymatous degeneration.

Meningitis occurs as a fibrous hyperplastic and a gummatous type. All three coverings of the brain may participate. In the dura it is sometimes the extension from an osteitis or periostitis. Where the meninges are primarily affected there is a diffuse gummatous infiltration usually combined with a fibrous hyperplastic meningitis. The leptomeninges in the great majority of cases forms the starting point even

where all three membranes are involved. In rare cases the arachnoid alone may be affected. Syphilitic meningitis is uniformly distributed on the base and convexity or it may be localized. In but few cases of syphilis of the nervous system does the base of the brain escape from a leptomeningitis or a pachymeningitis, the favorite site being the region of the chiasm and interpeduncular space, the optic nerve and the nerves of the eye muscles being especially frequently affected.

Gummata appear as smaller or larger single or multiple growths or as a diffuse infiltration. They are most frequently found in the dura on the convexity as well as the base of the brain. In the latter situation they are often multiple in the neighborhood of the blood vessels. In the brain substance they appear in the cortex usually in the region of the central convolutions but may occur any where. Gummata here, as elsewhere, begin their growth in the connective tissue of the meninges and blood vessels, the nerve structure itself, only undergoing secondary changes.

The blood vessels in disease of the central nervous system may be affected in a purely mechanical manner both in the meninges and the nerve tissue, by the extension of the process to their walls, or by specific disease within the walls leading to narrowing and obliteration of their lumen as described by Heubner. As a result of vascular disease there are marked disturbances of nutrition with sometimes necrotic softening in the area supplied by the vessels. The pons, medulla, large ganglia and internal capsule are more prone to softening than the cortex where collateral circulation may be established. Through reabsorption of the necrotic tissue a secondary sclerosis results. Rupture of the vessels and hæmorrhage are also consequent upon vascular disease with or without aneurysmal formation.

The line of demarcation formerly drawn between cerebro-spinal syphilis and tabes and paresis has gradually given way until now their etiology is regarded as identical, although a difference is admitted which is dependent upon localization and the nature of the tissue involved. Cerebro-spinal syphilis comprehends the exudative, vascular and gummatus changes which involve the membranes and the blood vessels within them. In the great majority of cases these processes remain superficial. Where they follow the pial or adventitial sheaths into the essential nervous structure itself they give rise to the borderline cases of tabes and paresis. In true paresis there is a combination of meningitis and encephalitis. The parenchyma of the brain shows a typical infiltration of plasma cells and lymphocytes in the adventitial lymph spaces. The secondary degenerative changes and atrophy

are probably dependent upon the vascular changes. In tabes a meningitis is also present which is believed by Nonne and others to lead to disease of the roots and secondarily of the posterior columns. The view of a primary degeneration without antecedent inflammatory changes has been practically abandoned.

*Fever.*—The occurrence of fever in syphilis is frequently overlooked or improperly diagnosed. It is a very variable manifestation. It is estimated that from 25 to 35 per cent of the cases in the secondary stage have an elevation of temperature. It may precede the eruption by several days and is commonly of the remittent type. With pains in the limbs and joints it may simulate rheumatic fever, while another variety simulates typhoid and has been called by Fournier Typhose syphilitique. Malaria and tuberculosis may also have to be differentiated. It is not generally appreciated that tertiary lesions may give rise to fever of every type and it is impossible to say how many of the obscure febrile cases are due to syphilis. It has been noted that hepatic disease is frequently accompanied by a rise of temperature. During the course of paresis attacks of fever lasting several days are very common. Kraus has called attention to febrile attacks in the course of latent syphilis which he refers to an invasion of the blood by spirochætæ.

*The Relation of Syphilis to Carcinoma.*—Our information concerning the development of carcinoma of the internal organs on a syphilitic base is meagre, owing to the difficulty of making a differential diagnosis between syphilitic ulcerations and those from other causes, as in the stomach, for instance.

The oral cavity and the skin, however, furnish material for the study of this condition. Leucoplakia of the mouth is in the majority of cases of luetic origin, although there appear to be a small group of individuals who suffer from this affection in whom syphilis cannot be invoked. In these cases we must seek the explanation in irritation of another nature. The query often comes up as to whether syphilis of itself causes leucoplakia, as the preponderance of cases occurs in individuals who are addicted to tobacco. While tobacco, alcohol, condiments and other irritating substances are probably factors in certain cases, leucoplakia is essentially a syphilitic lesion. Syphilis per se will not produce carcinoma, and it is questionable whether the scars and ulcers of syphilitic origin show a greater predisposition to malignancy than those of other etiology. The relationship is probably found in the greater frequency with which syphilis attacks the mucous membrane of the mouth as compared with other diseases thus offering more often a soil for malignant development on patches of leucoplakia or the ulcers, fissures or scars left by the breaking down of deep-seated gummata. In



the skin the occurrence of an epithelioma on a syphilitic lesion is very rare. A short time ago such a case was under observation at my clinic. The patient was a man with a specific osteomyelitis of the tibia followed by a discharging sinus and later by carcinoma.

*Syphilis in the Third Generation.*—There is no general agreement among syphilographers on the question of transmission of syphilis to the third generation. On the one hand it is negated by such an authority as Hutchinson and on the other it is admitted by Fournier, Barthélèmy, Tarnowski and others, while Finger, Jullien, etc., occupy an intermediate position.

A. Fournier collected the statistics of 46 marriages of heredosyphilitics. There were 143 pregnancies with the following results: 43 abortions, 39 still-birth, 63 living children which showed various dystrophies. From his observations he concluded that congenital syphilis in the third generation exists, but is rarely noted clinically because of difficulties of recognition. The mortality in this generation exacts a toll of two-fifths of its members. The disease is evidenced in about four-fifths of the cases by dystrophic stigmata which in no way differ from those of congenital syphilis and in about 14 per cent it exhibits symptoms of syphilis.

Recently Nonne published three cases that came under his observation. One of these I had the pleasure of seeing in his clinic at Eppendorf last summer. The patient was then about ten months old, had no manifest symptoms of syphilis but a positive Wassermann and luetin reaction. The mother of the child was fifteen years old and a congenital paretic. The grandfather was admittedly syphilitic, his infection was eight years old when he married and he had a cutaneous relapse before the birth of his daughter. A second child a year younger suffered from keratitis.

It is possible that the systematic examination, according to our modern methods, of the children of congenital syphilitics will reveal the presence of the disease more frequently than in the pre-Wassermann era. From our more definite knowledge of the biology of the virus and the nature of the infection the disease is probably transmissible only on the side of the female and through the placenta. Much investigation along these lines, however, will have to be followed to elucidate these points.

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## TREATMENT OF SYPHILIS IN THE PRIMARY STAGE.\*

By E. L. KEYES, Jr., M.D.,  
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THE golden dream of Ehrlich, the *therapia sterilisans magna*, that was to cure every syphilitic by a single injection of salvarsan, has not been realized. It is doubtful whether syphilis can truly be aborted at any time after its generalization. Perhaps abortion is possible after the Wassermann reaction has become positive, and even after secondary somatic lesions have appeared. But the real opportunity to treat syphilis, so as to cure it, presents itself in those few days that intervene between the appearance of the chancre and the appearance of the positive Wassermann reaction.

Therefore, the first essential for the proper treatment of syphilis is an early diagnosis. This diagnosis is usually made through the discovery of the spirochaeta pallida in the secretion of the lesion. I shall not waste your time by a discussion of the technic of this operation. Those of you to whom it is not familiar must learn it in the laboratory.

This insistence upon an early laboratory diagnosis runs counter to all the sober teachings of our forefathers. They maintained, very properly, that before the stigma of syphilis was placed upon the remaining days of a patient, the clinician must be certain in his diagnosis, beyond peradventure. But with the possession of salvarsan, and the possibility of a real cure of syphilis in these few fitting days before generalization of the disease, our whole attitude is changed. We must now make our diagnosis, by hook or by crook, before these same secondary lesions appear.

Let me not seem to depend upon the spirochaeta investigation alone. I should no more accept the diagnosis of syphilis upon a single unsupported finding of spirochaetæ than upon a single unsupported positive Wassermann reaction. The laboratory can err quite as brilliantly as the clinic. The spirochaeta diagnosis of chancre must be supported by clinical manifestations that suggest chancre. If there is doubt, or conflict, a section of the lesion should be excised for confirmatory diagnosis.

With the diagnosis thus established, what shall be our treatment? I submitted this question in the form of a circular letter to ten syphilologists in New York City. Their answers reveal the following opinions: Two of them do not use abortive treatment. The remaining eight employed it. Yet only one of those who do not attempt abortive treatment awaits the appearance of a positive serum reaction, or of secondary lesions before beginning treatment. All the others begin treatment at the earliest possible moment, on the discovery of spirochetæ. Of those who attempt

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abortion of the disease, only two practise excision of the chancre. One employs neo-salvarsan, the others old salvarsan.

The minimum number of doses of salvarsan is two, according to two gentlemen; four, according to one; five, according to three; and six, according to two. In other words, almost all insist upon at least four doses. The salvarsan is apparently always employed intravenously. The intervals between injection is usually one week, with variations of a day or two. One gives five doses at two or three day intervals.

Two gentlemen employ Gennerich's treatment, which implies the use of the mercurial injections with the salvarsan.

This treatment is described as follows by Fordyce, in *The Journal of Cutaneous Diseases*, November, 1914:

"In primary syphilis, with a negative Wassermann reaction, he gives six injections of salvarsan with the following intervals: The first four every five days, the fifth after seven days and the sixth after seven to eight days. Intramuscular injections of calomel, 0.05 to 0.07, are begun at the same time and continue until twelve to fifteen are given. This course usually suffices to sterilize the patient in the primary stage. In older cases of primary syphilis a second course of salvarsan may be needed.

"He regulates the dose according to the body weight and condition of the patient, giving to men from 0.3 to 0.45 gm., and to women 0.15 to 0.3 gm. He never gives 0.6 gm., as he considers it near the toxic limit. He seldom uses neo-salvarsan, except at times to women, or where a mild effect is desired."

After the completion of this first course of treatment every one of these gentlemen employs injections of mercury. The insoluble calomel, grey oil or salicylate are employed by six, the soluble compounds by two (while two made no mention of the salt employed). Four gentlemen (perhaps five) give supplementary courses of salvarsan, even though the Wassermann reaction never becomes positive, and no lesion appears. The balance only employ mercury.

The duration of the subsequent course of treatment is not clearly stated in the answers to my inquiry; but apparently it averages not longer than three months in most instances. (I prefer to continue at least a year.) Thereafter the cure is confirmed by the absence of symptoms and a negative Wassermann reaction. One repeats the blood test as often as once a month at first. Two are satisfied to let six months intervene. The last Wassermann reaction is made and the patient declared cured, at the end of one year by two reporters, at the end of two years by two, at the end of three years by two, and at the end of four years by one.

It is not clear how many require a provocative injection of salvarsan or a Wassermann test upon the spinal fluid as part of the final evidence.

I have enumerated these opinions in detail, not so much in order to confuse you by their differences, as to point out the striking similarity of opinion which they voice. They say, almost unanimously, that the treatment must be prompt; that we must depend upon the old, rather than the new, salvarsan; that the dose must be from three to five decigrams, rather than a larger one; that the injection must be made intravenously, and must be repeated a number of times; and that the treatment must be followed by a course of mercurial injections in order to insure the cure, and more particularly for the purpose of preventing relapses of syphilis in the nervous system in those patients who fail of a cure. While, finally, confirmation of our success is to be had by repeated Wassermann reactions made every few months, and continued for at least one year, or if I may consult my own preference, for two or three years followed by a provoked Wassermann, and the usual tests of spinal fluid.

With these conclusions I heartily concur. The patient who is so treated may expect to be entirely relieved of his disease. I use the word "expect" advisedly, for we have not yet lived long enough to be sure that even these cases are definitely cured. But we are in a position to state that they have nothing to lose by this treatment and everything to gain.

It has been feared that abortive treatment, by killing most of the spirochaetæ in the patient's body, might inhibit his reaction to the disease and thereby encourage grave relapse.

This fear has been verified in the so-called "neuro-recviv"; i. e.; syphilitic relapse in the nervous system occurring after the administration of salvarsan, following the outbreak of the secondary lesions. Such relapse in the nervous system is actually an outbreak of syphilitic lesions due to spirochetæ not eliminated by the salvarsan. It is not to be feared in patients who are treated before the Wassermann reaction becomes positive, nor indeed in any patient who follows the combined treatment with salvarsan and mercury, as suggested above.

The one type of relapse to be looked for after the employment of abortive treatment in the primary stage of the disease is a relapse of the chancre itself; this is likely to occur several months after the disappearance of the initial lesion. The new chancre appears on precisely the spot where the old one was, for it is but a recrudescence of the latter. Its course is that of the original lesion: It begins as an eroded papule, where spirochaetæ may be found; then the satellite glands enlarge, the Wassermann reaction becomes positive, the secondary septicemia ensues.

Such a relapse occurring several months after the disappearance of the original chancre, and at a time when the patient may consider himself cured of the original infection, may well have been preceded by a sexual contact and be considered a reinfection with syphilis. Yet I

have seen one case follow this course without any sexual exposure, and others have noted the same phenomena. It is worthy of note, therefore, that the so-called reinfection with syphilis, a few months after abortive treatment, is likely to be nothing more than evidence that the treatment was not wholly successful.

The percentage of successes with abortive treatment, we have no means of judging, for all of us have seen individuals remain apparently well for several years after an abortive treatment which we would nowadays consider insufficient.

Such patients seek permission to marry, and the prevailing opinion appears to be that the syphilitic may marry, if his Wassermann remains negative and he remains free from lesions for two years after the cessation of treatment. But we have not yet enough experience to settle this question absolutely. I feel safe for the present in adhering to the old rule of five years from chancre to matrimony.

#### SUMMARY.

1. Diagnosis of syphilis before the Wassermann reaction becomes positive is the foundation of abortive treatment.

2. Abortive treatment consists of repeated intravenous injections of old salvarsan, followed by injections of mercury.

3. The success of abortive treatment must be verified by repeated blood examinations, finishing with a provoked Wassermann and the spinal fluid tests.

4. The failure of abortive treatment may be shown by a succession of symptoms exactly simulating reinfection with syphilis.

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## THE METHODS OF TEACHING SYPHILIS.\*

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**T**HERE are two methods of teaching syphilis. One instituted when the medical college was improvised to meet the needs of a rugged, and rapidly increasing pioneer people, the other stimulated by the aims and requirements of modern medicine, is symbolized in the creation of a department of syphilis which this medical society of the Empire State has the honor of establishing.

The first can scarcely be called method but like the blind leading the blind, almost ignorant of what it would teach, it was doubtless the best that could be given until the dawn of a new era

in our understanding of syphilis with the discovery of the organism, which causes it by Schaudin and Hoffmann.

Previous to this epoch syphilis, like inflammation, was but a phenomenon, or at most, a group of phenomena united only by the bond of therapeutics which itself was empirical. Syphilis of the eye was dignified in text-books and in medical curricula as a special disease having its own pathology, course and treatment; tabes was relegated to that, in many schools, obscure realm of nervous diseases which was farthest removed from what was called the venereal department,—the former highly respectable, the latter not to be mentioned in public. The close relationship of the two, and so far as syphilis is concerned, the unity of their work was not suspected.

The teaching of syphilis in other departments was equally untrammelled by system or method. The so-called major departments of internal medicine and surgery rioted in an abundance of luetic material.

I recall two general medical wards in a hospital that was endeavoring to group syphilis under one department in which 32 and 54 per cent, respectively, of the diseases were found to be due to syphilis—in fact, were syphilis.

This seems a low percentage when compared with 80 per cent recently observed in a surgical ward in a hospital in Rio de Janeiro. It is unnecessary to reiterate that the hospitals for the insane, poor houses and similar eleemosynary institutions which cause such vast expenditures of money, are largely filled by, in most instances, preventable late manifestations of syphilis. Add to this the numerous untimely deaths of the otherwise physically fit, the untold misery of martial contamination with syphilitic offspring and the menace to the human race which syphilis gives rise to, and well may we say with the president of this Society—"That to win the profession to a broader and proper consideration of this disease is truly altruistic, economic and humanitarian."

The beacon light in this sea of misery is that syphilis, if early recognized, which it may be, and subjected to properly selected energetic treatment, may be eradicated from the system, and in a high percentage of cases the numerous sequelæ or late manifestations of the disease need never occur.

It does not require a remarkably discerning mind or very close observation to discover that its presence is not restricted to large cities but invades the hamlet and the farm, attacking the just and the unjust, the innocent and the guilty, the virtuous and the libertine in varying frequency, I say it does not require unusual acumen on the part of the consultant to discover that of all diseases syphilis is the worst treated. One reason, at least, for this inefficiency is that it seems so easy. It is easy the way it is commonly treated, but as intimated in the foregoing, the

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results are not wholly satisfactory. It may further be said that this is the method of teaching syphilis still followed in the medical schools of this continent, with but one or two exceptions, so far as I know, and one of these is one of the large universities of this State.

The second method of teaching syphilis is based on the fact that it is an important disease, probably the most important the young medical man is called on to treat, ranking with obstetrics and the acute infectious diseases, and that on its thorough management at the first possible moment after inoculation depends the well being of the patient, that of his future wife and the children he may beget. The haphazard treatment so generally followed must be replaced by the more exact methods in which the laboratory is a necessary accessory, together with facilities for carrying out the more delicate procedures now advocated which through training enables one to employ with safety to the patient and with the best prospect of freeing him from disease.

I have previously urged that the curricula of Medical Schools be confined to the essentials in medicine, that branches now taught be relegated to post graduate courses or followed as special fields of endeavor. With our medical course of four years, even if one or two years of hospital service be added, there is not sufficient time to enable the student to become proficient in all branches of medicine, but it is sufficiently long to enable him to master the essentials of medicine, if these essentials be wisely selected.

Granted that syphilis is one of these important branches the student should master, what are the best means of imparting this instruction? A committee appointed by the American Medical Association a few years ago to consider and report on the best methods of teaching syphilis, gave the following as a preliminary procedure:

The committee believes that one of the most important steps to be taken to mitigate the long train of ills that syphilis entails on the community is in the better training of medical students. With this end in view it desires to present the following recommendations:

1. (a) In revising the curricula of medical schools.
  - (b) In providing greater hospital facilities for its study and treatment.
  - (c) That it should receive more attention on the part of boards of health.
2. The present custom of teaching the disease in the various departments or chairs of a medical college should be abandoned and better co-ordination among teachers be established, because it is thought detrimental to the best interests of the student to teach without system, and because the student often fails to obtain a definite conception of the subject when given promiscuously or as a

side issue. Instruction as given at present is often conflicting and therefore confusing.

3. That so far as practicable the disease should be taught under one department. Although for involvement of special organs, such as the eye, internal viscera, nervous system, etc., co-operation should be sought with these respective departments.

4. It is also thought advisable that syphilis be taught in connection with the chair of diseases of the skin, for the following reasons: Since no thoroughly qualified dermatologist is without laboratory training in serology and microscopy, and since no one can recognize the common and multiform manifestations of syphilis without being skilled in recognizing the various lesions encountered on the skin, it seems most practicable that the teaching of syphilis should so far as possible be confined to dermatology. In this we do not advocate the subordination of syphilis, but in the training of under-graduates it should be recognized that by far the most important function in the department is to teach syphilis.

Since the above report was written I have been interested in examining the questions for granting a license to practice medicine in various States, and of the numerous published lists of questions thus examined I have only once or twice seen anything relating to syphilis.

While in the main I believe the committee's recommendations are commendable, yet medical teaching has progressed somewhat since this report was prepared. It is now generally recognized, at least in the Northern and Western sections of this country that without sufficient facilities the medical school has no right to exist, in fact, while it may not be looked on as a crime to send out incompetent men, yet there is a possibility of having such men refused by licensing boards. Such being the case the necessary equipment for teaching syphilis is first of all ample hospital facilities. This includes a well equipped laboratory and an operating room with the accessories required in serotherapy. These with a male and female ward and an ambulatory daily service should constitute a department of syphilis, which any municipal, well supported or sufficiently endowed hospital would have no difficulty in furnishing once the need is generally recognized. But college walls alone do not make a college any more than hospital walls a hospital—a fact boards of trust have been known to forget. The essential thing after all is to secure competent teachers, research workers and clinicians to utilize to the best advantage the facilities thus furnished. I know of a hospital employing skilled architects searching the land for the latest ideas in hospital construction in which syphilis is placed in the sociological department. I might further add that the work in this hospital is divided into two divisions, medical and surgical. Syphilis, with

other so-called medical subjects, is under the medical director, who may or may not have ability or special interest in the sub-departments over which he is supreme. In such a staff marked efficiency and enthusiasm, which creates great departments and turns out able men, is impossible.

I would recommend first that the powers that be establish a department for syphilis, add to it, if thought advisable, diseases of the skin or any other special branch in which the teaching may be most readily co-ordinated. Select a man who is competent and able to direct and correlate the work of the department in each of its subdivisions or branches. This man, it seems almost unnecessary to say before this body of men, will be more difficult to find than architectural ideas. The department chief should in turn select men to work on the various problems the disease gives rise to and to teach the student to work under a definite, comprehensive plan. Voluntary co-operation may succeed in special or individual instances, but as a rule, each department must have a head in fact as well as in name.

Such accomplishment, as briefly outlined, may indeed be utopian, but it is economic and humanitarian as well. In this country one of the great obstacles to the proper teaching of syphilis is in governing boards, which are seldom composed of medical men, are often prejudiced, liable to be unduly influenced by some one medical friend rather than the department chief, and whose members often possess the conservatism which hesitates to depart from the usual. Having secured an equipment of bricks and men, which latter should include a serologist, pathologist, and a neurologist with the occasional services of an oculist, the student should begin the study of syphilis in the third year. This should be in the laboratory and might be pursued with the general laboratory work of internal medicine. In the fourth year more time should be given to the subject, at least two sixty-minute hours a week, and the work should be of a more practical kind, in which the clinic with its various manifestations of the disease should be studied. Small classes, not to exceed ten are preferable, and the student should work rather than be a passive recipient of instruction.

Didactic lectures excepting on rare occasions are not advisable. Examinations should be held at frequent intervals, which should count in the final standing for graduation. With this method no teacher is deprived of giving instruction in the special phase of syphilis to which he may elect or be assigned. Such teaching, however, will be correlated so as to add to the instruction given on the subject as a whole and the chair will not be, as in some instances, encumbered by satellites of misinformation.

## THE DETERMINATION OF THE RELATIVE POSITION OF REST, BY PROLONGED OCCLUSION OF ONE EYE.\*

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THE determination of the relative position of rest is essential for the thorough understanding of every case of asthenopia which comes under observation. A number of tests have been elaborated for this purpose all depending upon the fundamental principle of annulling the binocular function in order to convert any latent deviating tendency which may exist into a manifest one and so render it capable of measurement objectively or subjectively. Briefly the tests may be divided into three groups, 1st, the production of an artificial diplopia by prisms with observation of the relation of the two images to one another. 2nd, the production of so great a dissimilarity in the form of the two images that fusion is impossible, as with the Maddox rod. 3d, the complete annulment of binocular vision by occlusion of one eye, as in the screen or cover test, this test having the great advantage of making both an objective and subjective measurement possible. I think that I am right in stating that a greater reliance can be placed upon this method than upon any other. The method to which the title of my paper refers is simply an extension in point of time of the screen or cover test.

It may be said at once that prolonged occlusion is not a method for routine use. The average patient would not tolerate it. The loss of judgment of distance, and the reduction in the field of vision and in illumination combine to make it quite other than a pleasant experience. Yet cases occur—I assume in other practices besides my own—in which serious and annoying symptoms persist or are aggravated in spite of the most accurate and judicious corrections we can make of the refraction and manifest heterophoria and of proper attention to general health, and in some of these cases the patients are willing to submit to any inconvenience which may tend to their relief.

I have used the device occasionally for over 18 years, being led to do so partly by the well known fact that when one eye becomes defective, or is temporarily occluded as a result of injury, disease or operation, a deviation not infrequently occurs; and more particularly by the observation of one case in which a burn of the eyelids by molten iron necessitated the closing of the eye for a week. At the end of that time the patient had diplopia, and examination showed right hypertropia of 1 to 2 degrees and exotropia 5 to 6 degrees. Seven days after removing the dressing no fault in the muscle balance could be found. A 1 degree prism placed in any position destroyed the orthophoric condition. It is a matter

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of interest that this man had been treated some years previously for diplopia by Dr. Geo T. Stevens with prism exercises. Apparently the exercises had succeeded in making the deviation latent. A somewhat similar case which may be referred to here was observed some years later. A boy, the subject of ophthalmia nodosa, complained after the removal of a bandage worn for several days following operation, of diplopia which was found to be due to an exotropia of 8 degrees and right hypertropia of 4 degrees which disappeared within two days after the bandage was taken off. A point worthy of note here is that the boy's mother had been for some time previously under my care for symptoms due to exophoria of 12 to 13 degrees and right hyperphoria of 1 degree.

The method adopted for putting this procedure into practice has consisted in replacing one of the patient's lenses with a ground glass. It is obviously not a matter of indifference which eye is selected for this purpose. If a latent deviation is present and due to a partial paralysis of a muscle, the result will vary according to the selection made. It is not always possible to determine this before the test and consequently the selection must often be made upon other grounds. In my cases this has been decided either by difference in visual acuity, the more defective eye being covered, or in cases where there was no difference, by allowing the patient to decide whether he was left eyed or right eyed by looking at a distant light with both eyes open through a ring held at arms length. If he sighted the light with the right eye the left was occluded.

But it has been necessary not only to substitute a ground glass for the usual one but also to create in the patient a state of mind which will prevent him from nullifying the value of the test in the many ways which can easily be imagined. Therefore only those patients have been selected for the purpose who by a combination of intelligence and a sincere desire to rid themselves of serious or annoying symptoms have seemed suitable for it. In the next place the object and way of working of the test has been thoroughly explained to them, and finally they have been warned in detail of the precautions to be taken to avoid giving the binocular function an opportunity to be active. At the end of the period of occlusion lenses correcting the refraction and a Maddox rod are placed in a trial frame, the patient is directed to close his eyes, the occluding glasses are removed and the trial frame substituted for them. The patient then opens his eyes and the deviation is measured in the ordinary way. It is often possible to observe a manifest deviation through or from above the ground glass. I have found in my case records notes of 90 cases in which this test has been used and a complete tabulated list of them is appended to this paper. The notes are not as complete as one could wish but the essential points are covered.

It is worth while to refer here to a paper by Bielschowsky read before the Heidelberg Ophthalmological Society and abstracted in the *Archives of Ophthalmology* for January, 1914. He defines the relative position of rest as that which the eyes assume when uninfluenced by any innervation due to the power of fusion, but admits the difficulty of determining it because the influence of the fusion power can not be sufficiently excluded. He therefore determined it in 289 cases in which binocular vision had been lost by disease of one eye.

His results are as follows:

|   |           |
|---|-----------|
| Practical parallelism in . . . . .            | 20 to 25% |
| Divergence of 2 degrees or more in . . . . .  | 60 to 70% |
| Divergence with hyperphoria in . . . . .      | 5 to 10%  |
| Convergence of 2 degrees or more in . . . . . | 10%       |

The longer binocular vision had been lost the greater was the percentage of high degrees of strabismus. Length of time of annulment of the binocular function is then an important element in determining the position of rest.

In my cases the periods of occlusion are as follows:

|                        |         |
|------------------------|---------|
| 1 case for . . . . .   | 1 day   |
| 5 cases for . . . . .  | 3 days  |
| 10 cases for . . . . . | 4 days  |
| 13 cases for . . . . . | 5 days  |
| 15 cases for . . . . . | 6 days  |
| 40 cases for . . . . . | 7 days  |
| 3 cases for . . . . .  | 8 days  |
| 1 case for . . . . .   | 9 days  |
| 2 cases for . . . . .  | 10 days |

—  
90 Cases

The shorter periods of occlusion were used in the earlier cases. The percentages obtained under these conditions are as follows:

Parallelism, 7%; Divergence without hyperphoria, 17%, Divergence with hyperphoria, 41½%, Total 58%; Convergence without hyperphoria, 4½%, Convergence with hyperphoria, 5½%, Total 10%; Hyperphoria without lateral deviation, 24½%, R 9%, L 15½%, Hyperphoria with lateral deviation, 47%, or 71½% of all cases.

In these statistics lateral deviations amounting to 1 degree or more and vertical deviations of ½ degree or more have been taken into consideration. Degrees refer to the angle of the correcting prisms.

It is true that the two groups of cases are not strictly comparable as in the former the loss or impairment of vision of one eye is the only common factor, whereas in the latter the grouping is due to the presence of asthenopia of one type or another in all, and therefore some anomaly of the muscle balance is on the whole more probable.

Moreover, on account of the conditions under which Bielschowsky's examinations were made, the fact that in those cases in which the measurement was made, by observation of corneal re-

flexes the angle gamma was neglected, and the refraction apparently not corrected, the results must be regarded as approximate only. In view of the association of convergence with accommodation it would seem that the effect of all refractive errors causing activity of the ciliary muscle should also be eliminated and that Bielschowsky's definition should be amended accordingly. In my cases the refraction was fully corrected. More important, however, than the relative frequency of the different positions of rest are the changes which actually resulted from occlusion. These may be stated as follows:

In 7 cases there was no change.

In 5 cases there was a reduction in the amount of error.

In 17 cases there was a reversal of the form of heterophoria.

In 6 cases esophoria changed to exophoria.

In 1 case (70) exophoria changed to esophoria.

In 11 cases R. became L. hyperphoria or the reverse.

For instance:

$\frac{1}{2}^{\circ}$  R. hyperphoria changed to  $2\frac{3}{4}^{\circ}$  L., finally to  $3\frac{1}{2}^{\circ}$  L. and Ex.

$\frac{1}{2}^{\circ}$  R. hyperphoria changed to  $\frac{1}{2}^{\circ}$  L.

$\frac{3}{4}^{\circ}$  L. hyperphoria changed to  $\frac{1}{2}^{\circ}$  R.

$1\frac{1}{2}^{\circ}$  R. hyperphoria changed to  $1^{\circ}$  L.

$\frac{1}{2}^{\circ}$  R. hyperphoria changed to  $1\frac{1}{2}^{\circ}$  L.

$\frac{1}{2}^{\circ}$  R. hyperphoria changed to  $1^{\circ}$  L.

$2^{\circ}$  L. hyperphoria changed to  $\frac{1}{4}^{\circ}$  R.

$\frac{1}{2}^{\circ}$  L. hyperphoria changed to  $1^{\circ}$  R.

$1^{\circ}$  L. hyperphoria changed to  $1\frac{1}{2}^{\circ}$  R.

$\frac{1}{2}^{\circ}$  R. hyperphoria changed to  $1\frac{3}{4}^{\circ}$  L.

$1\frac{1}{2}^{\circ}$  R. hyperphoria changed to  $\frac{3}{4}^{\circ}$  L.

In 7 of these cases there was Ex. of marked amount.

In 2 Ex. of  $1^{\circ}$  or  $2^{\circ}$ .

In one esophoria.

In one pure hyperphoria.

In 69 cases there was either an increase in the amount of error, or an error was found which was not demonstrable before occlusion.

The amount of increase varied much in degree, from a small percentage of the amount first observed, to several times the original measurement. Subsequent measurements in some cases showed that the result of occlusion did not represent the total error and this seems particularly true in those cases in which the period of occlusion was short. Thus is case 27, Left hyperphoria of 1 degree before rose to 2 degrees after three days occlusion, but the measurement six months later was 5 degrees plus. Similarly in case 34 left hyperphoria measuring 1 degree after 5 days occlusion rose to  $3\frac{1}{2}$  degrees 4 months later, and in case 40 orthophoria after 5 days of occlusion, changed to exophoria of 6 degrees and left hyperphoria of  $3\frac{1}{2}$  degrees. Even 10 days, however, may be insufficient to bring out the total error as in case 48. It is obvious then, that annulment of the binocular function for these short periods of time can not

be depended upon to do more than indicate the direction of the deviating tendency and therefore the periods should be made as long as possible.

It is not always true that later examinations reveal a greater degree of error. On the contrary, it is sometimes less and this is particularly true of exophoria when uncorrected or partly corrected by prisms.

If Bielschowsky's definition of the relative position of rest be accepted then it can scarcely be questioned that this method tends to reveal it and that it is free from the objections which may be urged against the use of prisms for the same purpose. With the latter objections I have however, seen very little reason for sympathy, and the same may be said of the permanent use of prisms. I have prescribed prisms in a very large number of cases with a full consciousness of the criticisms that have been made of their use and am unable to corroborate the harmful effects attributed to them. It is true that in some cases failure to relieve symptoms must be recorded, sometimes due to ascertainable causes and sometimes not, but against these must be put a much larger number in which conspicuous and prolonged relief has resulted from their use. In many cases a comparatively small variation in the strength of the prisms makes all the difference between success and failure to relieve. This fact has been impressed upon me more than once by patients themselves. Moreover, if prisms for relaxation bring about a weakness of the muscles, is it not rational to expect that these are just the cases in which to expect a rapid restoration by exercise?

While it is a matter of common observation that the prescription of prisms to correct a portion of a latent deviation is followed in many cases by the manifestation of a higher degree of error, it is also true that such manifestation occurs with greater rapidity and completeness if the binocular function is entirely annulled by occlusion, and the occluded eye is allowed to take up its position of rest. This fact is established by many cases in this series of which I will quote two only:

Case 2.—Mrs. L. P. M., age 33. Seen first on March 18, 1911, referred by her physician, Dr. C. D. Ver Nooy, of Cortland, on account of intractable headache and stomach trouble. She had suffered from the former from childhood periodically, but for several years it had been constant. She had been suffering from indigestion for five years, from which she had unable to obtain relief. Her refraction had been corrected with a considerable degree of accuracy but with the result of increasing her headaches. There had been previously no obvious connection between the use of the eyes and the occurrence of headache. Examination showed Exophoria of  $5\frac{1}{2}$  degrees and R. Hyperphoria of  $\frac{1}{2}$  degree. The addition of a 2 degree prism, base in, to each lens gave no relief, but after wearing the cor-

rection for three weeks the exophoria measured 9 to 10 degrees and the addition of a one degree prism, base in, to each lens stopped the headache and was also followed by the manifestation of  $\frac{1}{2}$  degree of L. hyperphoria. It will be remembered that at the first examination there was a low degree of R. hyperphoria. A ground glass was now prescribed and worn 8 days. On removing it there was an exophoria of 14 degrees and L. hyperphoria of  $2\frac{3}{4}$  degrees. Prisms correcting most of the hyperphoria and about  $\frac{1}{2}$  the exophoria gave complete relief from symptoms for two months. At a later date the errors were corrected by tenotomies with permanent relief to date.

Case 83—Miss V. S., aged 17, severe asthenopia for four years. No headache but eyes ache so much that she can not keep them open. First seen on January 20, 1914, when she was wearing R eye + O. 75 D s + 1.00 D c.  $110^\circ$ , L + O. 75 D s + 0.75, D c  $70^\circ$ . Examination showed the hypermetropia to be undercorrected and the astigmatism over-corrected and also that there was exophoria of 3 degrees by phorometer and 7 degrees by the screen test and L hyperphoria less than  $\frac{1}{2}$  degree. After cycloplegia she accepted R + 2.25 D s, + 0.75 D cyl.  $10^\circ$  L. + 2.25 D s, + 0.37 D cyl.  $55^\circ$  and showed about  $6^\circ$  of exophoria, no hyperphoria, abduction  $11^\circ$ .  $2^\circ$  prisms added to a full refractive correction made her a little but not much more comfortable. On March 30th exophoria measured 8 to 9 degrees. Adduction 43 degrees. Exercises were at a later date added to her treatment and in June exophoria measured 6 degrees, adduction 46 degrees the near point of convergence  $1''$  to  $1\frac{1}{2}''$  from the bridge of her nose and the prisms were experimentally omitted. They were replaced however, in August and increased to  $3\frac{1}{2}$  degrees. At the end of September, being no better, she was referred to a neurologist. At the end of six months, March 11th, she is reported as being a little better, but still unable to use her eyes or keep them open without pain. Her exophoria now measured 11 degrees. The total result to date being unsatisfactory a ground glass was prescribed. On removal a week later, the exophoria measured 24 degrees, hyperphoria 0. The divergence was apparent through the ground glass. While wearing it she was able to keep her eyes open and to use the unoccluded one with but little discomfort. As the case was evidently one of pure divergence excess and quite beyond the reach of prisms, tenotomy was advised and done with immediate relief to symptoms. This patient's mother was also the subject of exophoria.

This case shows that the exophoria found after occlusion may exceed in amount the abduction as measured before occlusion. While high abduction may suggest the presence of exophoria it can not be depended upon to indicate its limit.

The method also throws some light upon the effect of prisms for exercise. Perhaps I ought

to state that my own experience with exercise has been on the whole somewhat disappointing. I have occasionally seen patients who have admitted very marked improvement as a result of this kind of treatment, but such have been quite exceptional. I think that I have more frequently seen patients who have claimed great benefit from such treatment at the hands of other ophthalmologists, but I have also seen cases in which others have carried out these procedures without benefit and in some cases with apparent detriment. Moreover it is open to doubt if exercise does anything more than cover up or render latent errors which in their latent condition may continue to give rise to symptoms.

I cite a case in which exophoria of marked degree was rendered latent by exercise, absolutely without any improvement in symptoms and in which a few days of occlusion proved the existence of about the same amount of error as existed before the exercises were begun. I am aware that it is claimed that the improved tone of the muscles may be an advantage even through the error be undiminished. This may be true in some cases but it is certainly also true that the tone of the muscles may be so improved as even to maintain a normal or improved balance without any gain in the patient's subjective condition.

Case 87—Mrs. E. L. came under observation in 1896 when she was 23 years old, on account of severe headaches to which she had always been subject. Examination showed simple hypermetropic astigmatism, 2.75 D and exophoria of 4 degrees. She was prescribed full correction for the astigmatism and a prism of  $1\frac{1}{2}$  degrees base in for each eye. She wore her glasses for two years with comfort and then returned on account of slight asthenopia. There was a slight change in the amount of astigmatism, but the exophoria still measured 4 degrees. With the glasses prescribed on the basis of this examination, she remained comfortable for four years, at the end of which period she returned on account of headache. She then showed 6 degrees of exophoria and  $\frac{1}{2}$  degree of left hyperphoria. The prisms were now increased in strength. From this time she remained uncomfortable. A note on July 1913, shows that the headache has become almost constant. The exophoria on that day measured 9 to 10 degrees and the hyperphoria had disappeared. At that time the question of an operation was considered. Stronger prisms, however, gave her relief from headache but the asthenopia continued. I did not see her again for about eight months, during which time she had consulted two other oculists, the latter of whom had given her prismatic exercises with the result of reducing the exophoria to 3 degrees, the abduction being 8 degrees. The exophoria at  $13''$  measured about 14 to 16 degrees. There had been absolutely no improvement in her symptoms. The improvement in her muscles balance, however, seemed to justify a further trial of exercise and exercises for near point in



addition to those for distance were prescribed. At the end of six weeks, she was still suffering to the same extent, and a ground glass was then substituted for one of her lenses. At the end of a week she showed exophoria of 8 degrees. She was then advised operation, which was done with material relief to her symptoms. The last tenotomy was done on March 11th of this year, so that the final result can not be determined. This patient's near point of convergence corresponded with the end of her nose.

Of similar import is the following case:

Case 88—Mrs. T. A. M., age 50 (298), suffering from severe headaches and asthenopia, for which she had worn simple prisms without relief. Examination showed compound hypermetropic astigmatism, 12 degrees of exophoria, hyperphoria varying from right to left. Glasses correcting her hypermetropia and astigmatism and less than half the exophoria relieved her for six months, when the symptoms began to return. She then showed a higher degree of hypermetropia, the exophoria measured 10 degrees and there was left hyperphoria of 1 degree. A fuller correction of the errors again made her comfortable for six months, when the same procedure was repeated with the same results for the same period of time. She then showed 12 degrees or 13 degrees of exophoria (3 or 4 degrees beyond her glasses). Her physician reported high blood pressure and indicanuria. Prisms increasing the exophoric correction again relieved her for about five months, when she was persuaded by her friends to see another oculist. This oculist eliminated the prisms and also made her omit the use of glasses altogether for a month. When I saw her again six months later she was suffering practically the same symptoms, though her exophoria was greatly diminished (I think, to 3 or 4 degrees). A week's occlusion, however, resulted in the development of 13 degrees of exophoria and  $1\frac{3}{4}$  degrees of left hyperphoria. The result of leaving off glasses in this case was simply to induce a spasm of the muscles, which reproduced her old symptoms. Operation was advised in this case, but I have not seen the patient since.

It is impossible in the time of disposal to do more than indicate in a general way the results of using this method. While in a number of cases they have been negative, in a greater number they have been of positive value. For instance, in Case 44:

Miss C. H., age 21 (1596), consulted me on account of severe sick headaches to which she had always been subject. Her sister had been brought to me years previously on account of severe headaches, which ceased promptly on the correction of a little hypermetropia and astigmatism. In this second case, however, correction of a similar error produced practically no effect. The examination revealed also 1 degree of exophoria and  $\frac{1}{2}$  degree of right hyperphoria. The right hyperphoria was corrected without ef-

fect. A later examination showed a condition of orthophoria and emmetropia with her correcting glasses. Her physician reported her general condition, including urinalysis, normal. The headaches nevertheless persisted. As a last resort I had one eye occluded for a week. At the end of that time she showed from 1 to  $1\frac{1}{2}$  degrees of left hyperphoria and 10 degrees of exophoria, which was the explanation of the previous failure to relieve her symptoms. Prismatic correction of a part of this error gave her great, if not complete, relief. It will be observed that the hyperphoria appeared as right hyperphoria before occlusion and left hyperphoria afterward.

The usefulness of this method is by no means limited to these cases in which the latent heterophoria is of high degree. The same is true in cases in which the error is of low degree, thus in Case 80 a patient suffering from severe asthenopia and headache, whose symptoms had been invariably aggravated by previous attempts to correct his refraction, was completely relieved by the discovery and correction of 1 degree of hyperphoria, his muscle balance previous to occlusion having been absolutely normal.

Some of the most severe cases of photophobia which I have seen, other than those due to inflammatory conditions, have been caused by latent heterophoria, particularly hyperphoria. The following is an instance in that relation:

Mrs. E. B., age 40 (73-13), suffering from intense photophobia, wearing glasses over-correcting her astigmatism and under-correcting her hypermetropia. The first examination showed hyperphoria varying from right to left. After occlusion for 24 hours she showed 2 degrees of left hyperphoria. The correction of the refractive error with the addition of vertical prisms made her quite comfortable, so that three weeks later she pronounced herself quite well. Examination a year later showed that the improvement had on the whole been maintained, although there was still slight photophobia. The hyperphoria remained of the same degree, but a fuller correction was prescribed.

The main object of this paper has been to state the facts brought out by the method described. The interpretation of these facts and how they should be dealt with are matters for separate consideration. It seems to the writer, however, that there can be little doubt that this method does actually provide a more reliable means of determining the position of rest than any heretofore used; that the exophoria, for instance, found after occlusion, actually exists. The question of the interpretation of the reversal of the form of deviation is one of considerable interest, especially the cases in which right hyperphoria has been converted into left, and the reverse. It is noteworthy that in only one case was the hyperphoria pure, and in that case more prolonged occlusion might have revealed the presence of a lateral deviation. In all the other cases in which reversal took place the hyper-

| Memo No.       | Age    | Case No. | Kind of Heterophoria | 1st Exam. | Subsequent Exam. | Duration of Occlusion | After Occlusion | Latest Test | Refraction & Remarks  |
|----------------|--------|----------|----------------------|-----------|------------------|-----------------------|-----------------|-------------|---|
| 1-Miss V.R.    | Age 27 | 83-165   | Exoph.               | 2*        | 4*-5*            | 4 Days                | 10*-11*         | 8*          | Simple My. Astig. Anisometropia Great improvement. With prisms                              |
|                |        |          | Esoph.               |           |                  |                       |                 |             |   |
|                |        |          | R.Hyp.               | 1/2*      | 1 1/2*           |                       |                 | 1/2*        |   |
|                |        |          | L.Hyp.               |           |                  |                       |                 |             |   |
| 2-Mrs. L.F.H.  | Age 55 | 641      | Exoph.               | 0*        | 8*-9*            | 6 Days                | 14*             | 14*         | My. Astig. Anisoo. Practically complete relief after tenotomies.                            |
|                |        |          | Esoph.               |           |                  |                       |                 |             |   |
|                |        |          | R.Hyp.               | 1/2*      |                  |                       |                 |             |   |
|                |        |          | L.Hyp.               |           | 1/2*             |                       | 2 3/4*          | 3 1/2*      |   |
| 3-Mrs. F.L.P.  | Age 35 | 833      | Exoph.               | 6*        |                  | 6 Days                | 11*             | 5*          | My. Astig. Anisoo. Partial relief after tenotomies and prisms.                              |
|                |        |          | Esoph.               |           |                  |                       |                 |             |   |
|                |        |          | R.Hyp.               |           |                  |                       |                 |             |   |
|                |        |          | L.Hyp.               | 2*        |                  |                       | 11*             | 0*          |   |
| 4-Mrs. F.E.O.  | Age 42 | 10-105   | Exoph.               |           |                  | 7 Days                | 4*              |             | My. Astig. simple Prisms and refractive correction.   |
|                |        |          | Esoph.               | 3*        |                  |                       |                 |             |   |
|                |        |          | R.Hyp.               | stable    |                  |                       | 1*              |             |   |
|                |        |          | L.Hyp.               |           |                  |                       |                 |             |   |
| 5-Mrs. G.S.E.  | Age 29 | 70-5     | Exoph.               | 0*        | 0*               | 4 Days                | 6*              | 2*          | Compound Myopic Astig. Great relief from exercise with prisms, and correction of refraction |
|                |        |          | Esoph.               |           |                  |                       |                 |             |   |
|                |        |          | R.Hyp.               | 2*        |                  |                       | 0*              | 1/2*        |   |
|                |        |          | L.Hyp.               |           |                  |                       |                 |             |   |
| 6-Miss M.C.    | Age 12 | 83-118   | Exoph.               |           |                  |                       |                 |             | Compound Hyper. Astig. Great relief by addition of prisms to refractive correction.         |
|                |        |          | Esoph.               | 1*        |                  |                       | 7 0             |             |   |
|                |        |          | R.Hyp.               | 1/2*      |                  |                       | 2*              | 4 1/2*      |   |
|                |        |          | L.Hyp.               |           |                  |                       |                 |             |   |
| 7-Miss A.C.    | Age 19 | 1501     | Ex.                  | 0*        |                  | 5 Days                |                 |             | Simple Hypermetropic Astigmatism Anisoo. Relief temporarily with prisms                     |
|                |        |          | Es.                  | 0*        |                  |                       |                 |             |   |
|                |        |          | R.H.                 | 0*        |                  |                       |                 |             |   |
|                |        |          | L.R.                 | 0*        |                  |                       | 1/2*            | 1/2*        |   |
| 8-Mr. C.J.T.   | Age 31 | 601      | Ex.                  | 0*        |                  | 7 Days                | 7 1/2*          |             | Simple Myopic Astigmatism Improvement with prisms   |
|                |        |          | Es.                  | 0*        |                  |                       |                 |             |   |
|                |        |          | R.H.                 | 0*        |                  |                       |                 |             |   |
|                |        |          | L.R.                 | 1/2*      |                  |                       | 1*              |             |   |
| 9-Mrs. A.W.R.  | Age 40 | 1251     | Ex.                  | 0*        |                  | 6 Days                | 0*              | 0*          | Mixed Astigmatism Anisoo No change  |
|                |        |          | Es.                  | 0*        |                  |                       |                 |             |   |
|                |        |          | R.H.                 | 1/2*      |                  |                       | 0*              | 1/2*        |   |
|                |        |          | L.H.                 | 0*        |                  |                       | 0*              |             |   |
| 10-Miss C.L.   | Age 37 | 1222     | Ex.                  | 1*        |                  | 8 Days                | 3*              |             | Compound Myopic Astig Partial relief with vertical prisms                                   |
|                |        |          | Es.                  |           |                  |                       |                 |             |   |
|                |        |          | R.R.                 | 0*        |                  |                       |                 |             |   |
|                |        |          | L.R.                 | 0*        |                  |                       | 2*              |             |   |
| 11-Mrs. J.R.A. | Age 58 | 1154     | Ex.                  | 2*        |                  | 4 Days                | 4*              | 4*          | Compound Hyper. Astig. Anisoo.  |
|                |        |          | Es.                  |           |                  |                       |                 |             |   |
|                |        |          | R.H.                 |           |                  |                       |                 |             |   |
|                |        |          | L.H.                 | 2*        |                  |                       | 5*              | 4*          |   |
| 12-Mrs. F.P.D. | Age 33 | 706      | Ex.                  | 20*       |                  | 3 Days                | 22 2/3*         |             | Simple Myopic Astig. Advised operation  |
|                |        |          | Es.                  |           |                  |                       |                 |             |   |
|                |        |          | R.R.                 |           |                  |                       |                 |             |   |
|                |        |          | L.R.                 | 1=0*      |                  |                       | 4*              |             |   |

| Memo No.       | Age    | Case No. | Kind of Heterophoria | 1st Exam. | Subsequent Exam. | Duration of Occlusion | After Occlusion | Latest Test | Refraction & Remarks  |
|----------------|--------|----------|----------------------|-----------|------------------|-----------------------|-----------------|-------------|---|
| 13-Mr. E.J.R.  | Age 36 | 652      | Ex.                  |           |                  | 4 Days                |                 |             | Mixed Astig. Anisoo. Refractive correction and vertical prisms  |
|                |        |          | Es.                  | 2*        |                  |                       |                 |             |   |
|                |        |          | R.R.                 | 1 1/2*    |                  |                       |                 |             |   |
|                |        |          | L.R.                 | 1/2*      |                  |                       |                 | 1/2*        |   |
| 14-Miss E.T.   | Age 21 | 985      | Ex.                  | 2*        |                  | 6 Days                | 4*              |             | Compound Hyp. Astig. Refractive correction and prisms   |
|                |        |          | Es.                  |           |                  |                       |                 |             |   |
|                |        |          | R.R.                 | 1*        |                  |                       |                 | 1/2*        |   |
|                |        |          | L.R.                 |           |                  |                       |                 |             |   |
| 15-Mrs. T.C.V. | Age 54 | 582      | Ex.                  | 0*        |                  | 7 Days                |                 |             | Simple Hyp. Astig. Anisoo. Refractive correction  |
|                |        |          | Es.                  | 0*        |                  |                       |                 |             |   |
|                |        |          | R.R.                 | 1/4*      |                  |                       |                 |             |   |
|                |        |          | L.H.                 |           |                  |                       |                 | 1/2*        |   |
| 16-Mr. H.O.T.  | Age 30 | 555      | Ex.                  | 0*        | 0*               | 7 Days                | 3*              |             | Compound Hyp. Astig. Anisoo Refractive correction   |
|                |        |          | Es.                  | 0*        | 0*               |                       |                 |             |   |
|                |        |          | R.R.                 | 0*        | 0*               |                       |                 | 1/2*        |   |
|                |        |          | L.H.                 | 0*        | 0*               |                       |                 |             |   |
| 17-Miss R.R.   | Age 24 | 88       | Ex.                  | 0*        | 0*               | 4 Days                | 6*              | 4*          | Compound Hyp. Astig. Anisoo. Immediate relief. Prisms and refractive correction   |
|                |        |          | Es.                  | 0*        | 0*               |                       |                 |             |   |
|                |        |          | R.H.                 | 0*        | 0*               |                       | 0*              |             |   |
|                |        |          | L.H.                 | 0*        | 0*               |                       | 0*              |             |   |
| 18-Mrs. J.V.V. | Age 51 | 83-85    | Ex.                  | 2*        | 2*               | 7 Days                |                 | 5*          | My. Astig. Anisoo. Constant headache. Immediate relief with ground glass. Prisms and refractive correction  |
|                |        |          | Es.                  |           |                  |                       |                 |             |   |
|                |        |          | R.H.                 |           |                  |                       |                 |             |   |
|                |        |          | L.H.                 | 1*        | 0*               |                       |                 | 1/2*        |   |
| 19-Mr. G.W.H.  | Age 45 | 82-39    | Ex.                  | 0*        |                  | 3 Days                |                 |             | My. Astig. Anisoo Diabetes Retinitis later  |
|                |        |          | Es.                  | 0*        |                  |                       |                 |             |   |
|                |        |          | R.H.                 |           |                  |                       |                 |             |   |
|                |        |          | L.H.                 | 1*        | 2*               |                       |                 | 2 1/2*      |   |
| 20-Mrs. M.C.E. | Age 28 | 80-14    | Ex.                  | 4*        |                  | 8 Days                | 2*              |             | Compound Hyp. Astig. high degree Vertical prisms gave temporary relief only   |
|                |        |          | Es.                  |           |                  |                       |                 |             |   |
|                |        |          | R.H.                 | 1/2*      | 1/2*             |                       |                 | 1*          |   |
|                |        |          | L.R.                 |           |                  |                       |                 |             |   |
| 21-Mr. E.W.P.  | Age 26 | 80-106   | Ex.                  |           |                  | 6 Days                | 4*              | 6*          | R-mixed L-compound Hypermetropic astig. Prismatic correction which gave him complete relief. Another oculist tried his later without prisms, but had to replace them. |
|                |        |          | Es.                  | 4*        | 1*               |                       |                 |             |   |
|                |        |          | R.H.                 | 0*        |                  |                       | 0*              |             |   |
|                |        |          | L.R.                 | 0*        |                  |                       | 0*              |             |   |
| 22-Mr. C.A.H.  | Age 15 | 79-134   | Ex.                  | 0*        |                  | 4 Days                | 6*              | 2*          | Compound hyp. astig. Not relieved by glasses  |
|                |        |          | Es.                  | 0*        |                  |                       |                 |             |   |
|                |        |          | R.H.                 | 0*        | 1/2*             |                       | 0*              | 1/2*        |   |
|                |        |          | L.R.                 | 0*        |                  |                       |                 |             |   |
| 23-Mrs. J.E.F. | Age 37 |          | Ex.                  | 0*        |                  | 9 Days                |                 |             | R-mixed L-compound Hypermetropic astig. headache Introposition, asth. Complete relief from refractive correction and vertical prisms                                  |
|                |        |          | Es.                  | 2*        | 0*               |                       |                 |             |   |
|                |        |          | R.H.                 | 0*        | 0*               |                       | 1*              | 1 1/2*      |   |
|                |        |          | L.H.                 | 0*        | 0*               |                       |                 |             |   |
| 24-Mr. J.V.S.  | Age 46 | 80-65    | Ex.                  | 0*        |                  | 3 Days                |                 |             | Compound Hyp. astig. Neurothemia Temporary relief from refractive correction and vertical prisms  |
|                |        |          | Es.                  | 0*        |                  |                       |                 |             |   |
|                |        |          | R.R.                 | 0*        | 1 1/2 3/4        |                       |                 | 1*          |   |
|                |        |          | L.H.                 | 0*        |                  |                       |                 |             |   |

phoria has been complicated by lateral deviation, usually exophoria, most commonly of marked degree. This circumstance suggests that in the effort to overcome exophoria some action of the vertical muscles is involved, which is not improbable, as they are all, with the exception of the superior obliques, supplied by the same nerve. On the other hand, it is possible that the effort made to correct the right hyperphoria, for instance, is excessive and left hyperphoria is the result. An analogy of this may be seen in the cases of hypermetropia in which an apparent

myopia results from an excessive effort of the accommodation.

The cases in this series in which tenotomies have been done (eight in all) are those in which first, the amount of error was too great to be neutralized sufficiently by prisms; second, those in which partial correction by prisms had given partial or temporary relief; and third, those in which exercise seemed unsuitable or had been tried without improvement. If a tenotomy was done the tendon was never completely divided, the marginal fibres being left intact, so

| Case No.          | Name   | Age    | Kind of Stereophoria                   | 1st Exam     | Subsequent Exam | Duration of Occlusion | After Occlusion | Latent Test  | Refraction & Remarks  |
|-------------------|--------|--------|--|--------------|-----------------|-----------------------|-----------------|--------------|---|
| 25-Mrs. L.S.      | Age 19 | 621    | Ex. 5°<br>Es.<br>R.H.<br>L.H.          | 1/2°<br>1/2° | 1/2°            | 6 Days                | 12°<br>3°       | 4 3/4°       | Compound hyp. astig. aniso. Headache and epilepsy. Prisms without relief. Tenotomies with relief from headache. |
| 26-Mr. W.R.P.     | Age 28 | 23-2   | Ex. 0°<br>Es. 0°<br>R.H. 0°<br>L.H. 0° | 1/2°         | 0°              | 5 Days                | 0°              | 0°           | Simple hyp. astig. low degree. Relief from refractive correction.   |
| 27-Mrs. O.S.J.    | Age 29 | 205    | Ex. 2°<br>Es.<br>R.H.<br>L.H.          | 1°           | 1°              | 3 Days                | 1°              | 5°           | Compound my. astig. aniso. Material improvement by prisms, and refractive correction.                           |
| 28-Mrs. W.H.W.    | Age 40 | 877    | Ex. 5°<br>Es.<br>R.H.<br>L.H.          | 1/2°<br>1/2° | 1/2°            | 6 Days                | 8°              | 1/2°         | Compound hyp. ast. aniso. Prisms added to refractive correction gave great relief.                              |
| 29-Mrs. C.V.F.    | Age 16 | 78-102 | Ex. 0°<br>Es. 0°<br>R.H. 0°<br>L.H. 0° | 1/2°         | 0°              | 6 Days                | 1°              | 1 1/2°       | Compound My. Astig. Aniso. Discontinued attendance.   |
| 30-Mrs. F.B.      | Age 10 |        | Ex. 0°<br>Es. 0°<br>R.H. 0°<br>L.H. 0° | 0°           | 0°              | 7 Days                | 0°              | 2° 1°        | Compound My. Astig. Aniso. Aetbenopic. Complete relief. Vertical prisms and refractive correction.              |
| 31-Miss V.W.      | Age 32 | 76-47  | Ex. 0°<br>Es. 0°<br>R.H.<br>L.H.       | 0°<br>0°     | 0°              | 7 Days                | 8°              | 7°           | Compound hypermetropic astigmatism. Practically complete relief with prisms, and refractive correction.         |
| 32-Miss C.D.      | Age 12 |        | Ex. 0°<br>Es. 0°<br>R.H.<br>L.H.       | 0°           | 0°              | 10 Days               | 8°              | 1/2°         | Compound hypermetropic astigmatism. sent to physician.  |
| 33-Mr. L.O.       | Age 10 | 76-179 | Ex. 2°<br>Es. 0°<br>R.H. 0°<br>L.H. 0° | 0°           | 0°              | 5 Days                | 0°              | 1 1/2° 1°    | Compound hypertropic astigmatism. Complete relief from prisms and refractive correction.                        |
| 34-Mrs. A.J. McM. | Age 42 | 74-14  | Ex. 0°<br>Es. 0°<br>R.H.<br>L.H.       | 0°           | 0°              | 5 Days                | 0°              | 1°-2° 3 1/2° | Compound hypermetropic astigmatism. Partial relief with prisms.   |
| 35-Miss H.T.W.    | Age 35 | 75-112 | Ex. 0°<br>Es. 0°<br>R.H.<br>L.H.       | 1/2°         | 1/2°            | 5 Days                | 0°              | 1/2°         | Compound hypermetropic astigmatism. Refractive correction and prisms. Partial relief.                           |
| 36-Mrs. J.K.      | Age 27 | 75-192 | Ex. 0°<br>Es. 0°<br>R.H.<br>L.H.       | 0°           | 0°              | 7 Days                | 0°              | 0°           | Simple hypermetropic astigmatism. Partial relief from refractive correction.                                    |

| Case No.        | Name   | Age    | Kind of Stereophoria                                | 1st Exam | Subsequent Exam | Duration of Occlusion | After Occlusion | Latent Test | Refraction & Remarks   |
|-----------------|--------|--------|---|----------|-----------------|-----------------------|-----------------|-------------|--|
| 37-Mr. H.S.V.H. | Age 21 | 74-120 | Ex. 0°<br>Es. 0°<br>R.H. 0°<br>L.H. 0°              | 0°       | 1 3/4°          | 5 Days                | 0°              | 3° 1/2°     | Compound hypermetropic astigmatism. ? Neurasthenic, orth. Neither refractive correction or prisms gave material relief.              |
| 38-Mrs. E.B.    | Age 40 | 73-13  | Ex. 1°-2°<br>Es.<br>R.H. var-<br>ices R<br>L.H. " L | 1 1/2°   | 1 1/2°          | 7 1 Day               | 0°              | 2°          | Compound hypermetropic astigmatism, aniso. Intense photophobia. Practically complete relief with prisms and refractive correction.   |
| 39-Mr. V.P.H.   | Age 37 | 73-122 | Ex. 0°<br>Es. 0°<br>R.H.<br>L.H.                    | 3/4°     | 1 1/2°          | 7 Days                | 0°              | 1/2° 3/4°   | Compound hypermetropic astigmatism, aniso. Severe asthen. definite improvement after prismatic correction of hyperphoria.            |
| 40-Miss H.L.G.  | Age 29 | 73-157 | Ex. 2-3°<br>Es.<br>R.H. 0°<br>L.H. "                | 0°       | 0°              | 5 Days                | 0°              | 0° 3 1/4°   | Compound hypermetropic astigmatism. Relief by refractive correction and prisms.  |
| 41-Miss V.G.    | Age 36 | 24-31  | Ex. 1°<br>Es.<br>R.H. 1/2°<br>L.H.                  | 0        | 0               | 7 Days                | 7-8°            | 6°          | Mixed astigmatism, aniso. Nervous prostration, headache. Prisms gave marked relief temporarily.                                      |
| 42-Mr. F.R.M.   | Age 9  |        | Ex. 0°<br>Es. 7°<br>R.H. 0°<br>L.H. 0°              | 1/2°     | 1/2°            | 7 Days                | No Note         | 1°          | Compound hypermetropic astigmatism. Headache and neurasthenia. Much improved after correction of left hyperphoria by prisms.         |
| 43-Miss J.L.H.  | Age 53 | 186    | Ex. 0°<br>Es. 0°<br>R.H. 0°<br>L.H. 0°              | 0°       | 0°              | 6 Days                | 0°              | 0°          | Compound myopic astigmatism aniso.   |
| 44-Miss C.R.    | Age 21 | 1596   | Ex. 1°<br>Es. 0°<br>R.H. 1/2°<br>L.H. 0°            | 0°       | 0°              | 7 Days                | 10°             | 1-1 1/2°    | Compound hypermetropic astigmatism. Intense periodic sick headaches. No relief from refractive correction. Great relief from prisms. |
| 45-Mrs. E.A.W.  | Age 29 | 2045   | Ex. 0°<br>Es. 0°<br>R.H. 0°<br>L.H. 0°              | 0°       | 0°              | 4 Days                | 5°              | 1°          | R Hypermetropia. L Hypermetropic astigmatism. Refractive correction and prisms.  |
| 46-Miss A.O.A.  | Age 54 | 2738   | Ex. 1°<br>Es. 0°<br>R.H. 0°<br>L.H. 0°              | 0°       | 0°              | 7 Days                | 6°              | 0°          | R Myopia. L Myopic astigmatism. Refractive correction and prisms.  |
| 47-Miss E.R.    | Age 16 | 62-146 | Ex. 0°<br>Es. 0°<br>R.H. 0°<br>L.H. 0°              | 1/2°     | 1/2°            | 6 Days                | 3°              | 3°          | Compound hypermetropic astigmatism. Refractive correction and vertical prisms.   |
| 48-Miss A.M.    | Age 27 | 2701   | Ex. 0°<br>Es. 0°<br>R.H. 1/2°<br>L.H.               | 0°       | 0°              | 7 Days                | 3°              | 4-5°        | Compound hypermetropic astigmatism. Seven facial spasms. Partial relief with refractive correction and prisms.                       |

that a hook placed under the edge could not be brought forward. The most important point, however, with regard to tenotomy is its after treatment. The effect of the operation depends very largely upon leaving the eye open and insisting upon the use of the two eyes together immediately after operation. In this way re-attachment of the tendon at the most advantageous point is ensured. That partial tenotomy done and treated in this way is not without effect is a matter of demonstration and is shown conclusively by two cases in this series.

In Case 3 a left hyperphoria measuring 11 degrees after occlusion was reduced to 1 degree in this way. One year and five months after this operation occlusion was again used, showing the hyperphoria to be corrected, except that there was a low degree of left hyperphoria on the left side of the field. The exophoria in this case was also reduced from 11 degrees to 6 degrees.

In Case 67, Mrs. J. D. W., who showed on the first examination exophoria of 2 degrees in addition to hypermetropia, astigmatism and anisometropia. The refraction only was corrected. She came back in 1912 on the advice of

| Name                                   | Age                          | Case No. | Kind of Heterophoria | 1st Exam   | Subsequent Exam | Duration of Occlusion | After Occlusion | Latest Test | Refraction & Remarks  |   |
|--|------------------------------|----------|----------------------|------------|-----------------|-----------------------|-----------------|-------------|---|---|
| 49-<br>Mr. C.H.P.                      | Age 44<br>9-239              |          | Ex.                  | 0'         | 4'              | 4<br>Days             | 3'              | 4'          | Compound hypermetropic astigmatism. More comfortable while wearing ground glass. Refractive correction and prisms   |   |
|  |                              |          | Es.                  | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | P.R.                 | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 | 0'         |                 |                       |                 |             |   |   |
| 50-<br>Mr. A.N. McW                    | Age 42<br>1112               |          | Ex.                  | 0'         | 0'              | 5<br>Days             |                 | 2'          | 1'  | Mixed astigmatism. Obstinate asth. High mixed ect. No relief until hyperphoria found and corrected. |
|  |                              |          | Es.                  | 0'         | 0'              |                       |                 |             |   |   |
|  |                              |          | R.H.                 | 1/2'       | 0'              |                       |                 |             |   |   |
|  |                              |          | L.H.                 | 0'         | 0'              |                       |                 |             |   |   |
| 51-<br>Mrs. L.A.B.                     | Age 34<br>54-64              |          | Ex.                  | 5'         | 5'              | 7<br>Days             | 12'             |             | Compound myopic astigmatism aniso. Tenotomy, some relief. Still under observation.  |   |
|  |                              |          | Es.                  |            |                 |                       |                 |             |   |   |
|  |                              |          | R.H.                 |            |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 | 0'         | 1'              |                       |                 |             |   |   |
| 52-<br>Mrs. C.J.W.                     | Age 42<br>2568               |          | Ex.                  | 0          |                 | 7<br>Days             | 4'              |             | Compound hypermetropic astigmatism, aniso. Great relief following tenotomy of left superior rectus.   |   |
|  |                              |          | Es.                  | 0          |                 |                       |                 |             |   |   |
|  |                              |          | P.R.                 | 0          |                 |                       |                 |             |   |   |
|  |                              |          | L.R.                 | 0          | 5'              |                       |                 |             |   |   |
| 53-<br>Miss S.S.                       | Age 33<br>425                |          | Ex.                  | 0'         |                 | 1<br>Week             | 4'              | 1'          | Compound hypermetropic astigmatism, aniso. Marked relief. Prisms and refractive correction  |   |
|  |                              |          | Es.                  | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | P.R.                 | 1'         |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 | 0'         | 1-2'            |                       |                 |             |   |   |
| 54-<br>Mr. C.T.S.                      | Age 24<br>56-93              |          | Ex.                  |            |                 | 4<br>Days             | 2'              | 2'          | Mixed astigmatism. Prisms and refractive correction. No relief  |   |
|  |                              |          | Es.                  | 1'         |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 |            | 1'              |                       |                 |             |   |   |
|  |                              |          | L.R.                 |            |                 |                       |                 |             |   |   |
| 55-<br>Mr. J.F.P.                      | Age 40<br>1747               |          | Ex.                  | 0'         |                 | 7<br>Days             | 1 3/4'          | 1'          | R Mixed L Compound hypermetropic astigmatism. Partial relief from refractive correction and prisms  |   |
|  |                              |          | Es.                  | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | P.R.                 | 1/2'       |                 |                       |                 |             |   |   |
|  |                              |          | L.R.                 |            |                 |                       |                 |             |   |   |
| 56-<br>Mrs. J.F.C.                     | Age 31<br>1753               |          | Ex.                  | 0'         |                 | 7<br>Days             | 3'              | 1/4'        | Compound hypermetropic astigmatism, aniso. Refractive correction  |   |
|  |                              |          | Es.                  | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 |            |                 |                       |                 |             |   |   |
|  |                              |          | L.R.                 | 1-2'       | 2'              |                       |                 |             |   |   |
| 57-<br>Mrs. H.O.W.                     | Age 40<br>1758               |          | Ex.                  | 1'         |                 | 6<br>Days             | 0'              | 3/4'        | Compound hypermetropic astigmatism. Refractive correction and prisms. Relief  |   |
|  |                              |          | Es.                  |            |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 | low degree |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 |            |                 |                       |                 |             |   |   |
| 58-<br>Miss E.M.W.                     | Age 23<br>2241               |          | Ex.                  | 0'         | 0'              | 7<br>Days             | 2' - 0'         | 0'          | R-Simple hypermetropic astigmatism<br>L-Simple myopic astigmatism/aniso.<br>Refractive correction<br>Relief   |   |
|  |                              |          | Es.                  | 0'         | 0'              |                       |                 |             |   |   |
|  |                              |          | R.H.                 | 0'         | 0'              |                       |                 |             |   |   |
|  |                              |          | L.H.                 | 0'         | 0'              |                       |                 |             |   |   |
| 59-<br>Mrs. J.A.G.                     | Age 40<br>1926               |          | Ex.                  |            | 3'              | 4<br>Days             | 6-6'            |             | Hyper. Asth. Crossed at birth = False projection  |   |
|  |                              |          | Es.                  | 4'         |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 |            |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 |            |                 |                       |                 |             |   |   |
| 60-<br>Miss E.P.                       | Age 23<br>2098               |          | Ex.                  |            |                 | 6<br>Days             | 2'              |             | R Simple hypermetropic astigmatism<br>L Compound hypermetropic astigmatism.<br>Aniso.<br>Refractive correction & prisms   |   |
|  |                              |          | Es.                  | 2'         |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 |            |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 | 1/2'       | 1 1/2'          |                       |                 |             |   |   |
| 61-<br>Mr. T.E.P.                      | Age 21<br>2059               |          | Ex.                  | 0'         | 0'              | 7<br>Days             |                 |             | R Simple hyper. astig. L Esotropia. Epilepsy and headache. Marked improvement from correction of hyperphoria alone.   |   |
|  |                              |          | Es.                  | 0'         | 0'              |                       |                 |             |   |   |
|  |                              |          | P.R.                 | 0'         | 0'              |                       |                 |             |   |   |
|  |                              |          | L.R.                 | 0'         | 0'              |                       |                 |             |   |   |
| 62-<br>Mr. C.T.                        | Age 8<br>667                 |          | Ex.                  |            |                 | 7<br>Days             |                 | 1'          | Compound hypermetropic astigmatism<br>Refractive correction and vertical prisms<br>? No relief  |   |
|  |                              |          | Es.                  | 1'         | 1'              |                       |                 |             |   |   |
|  |                              |          | R.H.                 |            |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 | 3/4'       | 1'              |                       |                 |             |   |   |
| 63-<br>Mrs. T.J.C.                     | Age 40<br>1292               |          | Ex.                  |            |                 | 7<br>Days             |                 | 3' - 3'     | Compound hyper. astig. Lenses opac. in R. Headache. Definite relief with prisms.  |   |
|  |                              |          | Es.                  |            |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 | 1/2'       | 1'              |                       |                 |             |   |   |
|  |                              |          | L.H.                 |            |                 |                       |                 |             |   |   |
| 64-<br>Miss E.C.                       | Age 47<br>2-83               |          | Ex.                  | 4'         | 0'              | 7<br>Days             | 10'             | 2 1/4'      | Compound hyper. astig., aniso. Asthenopia obtundate. Oefinite relief from prismatic correction.   |   |
|  |                              |          | Es.                  |            | 0'              |                       |                 |             |   |   |
|  |                              |          | R.H.                 | 1'         | 0'              |                       |                 |             |   |   |
|  |                              |          | L.R.                 |            | 0'              |                       |                 |             |   |   |
| 65-<br>Mrs. L. McH.                    | Age 47<br>2761               |          | Ex.                  | 2'         | 4'              | 6<br>Days             | 4               | 4'          | Compound hyper. astig. Nervous wreck. ? No better.  |   |
|  |                              |          | Es.                  |            |                 |                       |                 |             |   |   |
|  |                              |          | R.H.                 | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | L.R.                 | 0'         | 1/2'            |                       |                 |             |   |   |
| 66-<br>Miss E.F.K.                     | Age 19<br>36<br>39-11        |          | Ex.                  |            |                 | 5<br>Days             | 2'              | 1 1/2'      | Compound hyper. astig. Wore first glasses for hyp. astig. for 17 years. Recent neurasthenia 1914. Much relief from headache with refractive correction and vertical prisms. |   |
|  |                              |          | Es.                  | 1897       | 1914            |                       |                 |             |   |   |
|  |                              |          | R.H.                 | 0'         | 0'              |                       |                 |             |   |   |
|  |                              |          | L.R.                 | 0'         | 0'              |                       |                 |             |   |   |
| 67-<br>Mrs. J.L.W.                     | Age 27<br>to<br>32<br>61-38  |          | Ex.                  | 2'         | 4'              | 7<br>Days             | 13'             | 1 1/2'      | Compound hyp. astig., aniso Refractive correction and prisms<br>Tenotomies  |   |
|  |                              |          | Es.                  |            |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 | 1/2'       | 1/2'            |                       |                 |             |   |   |
|  |                              |          | L.R.                 |            |                 |                       |                 |             |   |   |
| 68-<br>One year after lat. tenotomies. |                              |          | Ex.                  | 2-3        |                 | 7<br>Days             | 8-10'           |             | Great relief by tenotomies.   |   |
|  |                              |          | Es.                  |            |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 | 1/2'       |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 |            |                 |                       |                 |             |   |   |
| 69-<br>Mrs. W.E.W.                     | Age 40<br>3140               |          | Ex.                  | 0'         | 3'              | 7<br>Days             | 4'              | 1'          | Simple myop. astig., asthenopia. Premature Presbyopia. ? Hysterical ocomodotivie spasms. Ex. 10 at 13" Prisms for reading gave definite relief.                             |   |
|  |                              |          | Es.                  | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | R.H.                 | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | L.R.                 |            |                 |                       |                 |             |   |   |
| 70-<br>Mrs. E.H.                       | Age 49<br>77-28              |          | Ex.                  | 1-2'       |                 | 5<br>Days             | 3'              | 3'          | Compound hyp. astig., aniso. Refractive correction and prisms<br>? No relief  |   |
|  |                              |          | Es.                  |            |                 |                       |                 |             |   |   |
|  |                              |          | P.H.                 | 1/2'       | 1 1/2'          |                       |                 |             |   |   |
|  |                              |          | L.H.                 |            |                 |                       |                 |             |   |   |
| 71-<br>Mrs. F.M.R.                     | Age 35<br>to<br>58<br>16-184 |          | Ex.                  | 0'         |                 | 7<br>Days             | 2'              | 3'          | Compound hyp. astig., aniso. Great relief from prismatic correction and refractive correction   |   |
|  |                              |          | Es.                  | 0'         | 1'              |                       |                 |             |   |   |
|  |                              |          | P.R.                 | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | L.H.                 | 0'         | 2'              |                       |                 |             |   |   |
| 72-<br>Mrs. C.W.F.                     | Age 30<br>to<br>35<br>80-193 |          | Ex.                  | 0'         |                 | 5<br>Days             | 2'              | 0'          | Compound myopic astig., aniso. Relief for 6 years by prisms and refractive correction   |   |
|  |                              |          | Es.                  | 0'         |                 |                       |                 |             |   |   |
|  |                              |          | P.R.                 |            |                 |                       |                 |             |   |   |
|  |                              |          | L.R.                 | 1'         | 0'              |                       |                 |             |   |   |

her physician because of asthenopia, headache, nervousness and indigestion. The exophoria then amounted to 4 degrees and as the refractive correction had previously failed to give her satisfactory relief a ground glass was prescribed over her right eye. Seven days later she showed exophoria of 13 degrees and right hyperphoria of 1 1/2 degrees. She was prescribed prisms for temporary use, which gave her material relief for two or three months. She was tenotomized, less than 2 degrees of exophoria being left. There was a positive improvement in her symptoms after this operation, but headache and nervous-

ness still continued. Tests showed between 2 and 3 degrees of exophoria. In order to test the effect of the operation a ground glass was again prescribed over her right eye and at the end of one week exophoria of about 9 degrees was found.

When the correction desired cannot be obtained by this method, it is my practice to divide the marginal fibres at a later date through two separate incisions, leaving the middle fibres intact. In this way the whole width of the attachment is set back without any disturbance of the alignment. The whole procedure can be re-

| Name        | Age          | Case No. | Kind of Heterophoria | Lat Exam | Subsequent Exam | Duration of Occlusion | After Occlusion Latest Test | Refraction & Remarks   |  |
|-------------|--------------|----------|----------------------|----------|-----------------|-----------------------|-----------------------------|--|--|
| Mrs. S.M.R. | Age 60 to 58 | 72-122   | Ex.                  | 3'-4"    | 2'              | 7 Days                | 7'                          | R Compound hyp. astig. L Hph. Relief by refractive correction and prisms   |  |
|             |              |          | Es.                  |          |                 |                       |                             |  |  |
|             |              |          | R.H.                 |          |                 |                       |                             |  |  |
|             |              |          | L.R.                 | 1/2'     | 1'              |                       | 1/2'                        |  |  |
| Miss F.S.   | Age 30       | 3659     | Ex.                  | 2'       | 2'              | 5 Days                | 5-7'                        | Compound hyp. astig., aniso. Refractive correction & prisms No relief - still under observation  |  |
|             |              |          | Es.                  |          |                 |                       |                             |  |  |
|             |              |          | R.R.                 | 0'       |                 |                       |                             |  |  |
|             |              |          | L.R.                 | 0'       | 1/2'            |                       | 0'                          |  |  |
| Mrs. J.K.   | Age 34       | 65-176   | Ex.                  | 0'       | 1'              | 6 Days                | 1'                          | Compound hyp. astig., aniso. Refractive correction result unknown  |  |
|             |              |          | Es.                  | 0'       |                 |                       |                             |  |  |
|             |              |          | R.H.                 | 0'       | 1/2'            |                       |                             |  |  |
|             |              |          | L.H.                 | 0'       |                 |                       | 1/2'                        |  |  |
| Mrs. R.D.M. | Age 32 to 46 | 27-161   | Ex.                  | 0'       | 0'              | 7 Days                | 4'-5'                       | Compound hyp. astig., aniso. severe sick headache. High hy. and astig. Correction had but little effect until hyperphoria was corrected by prisms.     |  |
|             |              |          | Es.                  | 3'-4"    | 0'              |                       |                             |  |  |
|             |              |          | R.H.                 | 0'       | 0'              |                       |                             |  |  |
|             |              |          | L.H.                 | 0'       | 0'              |                       | 3'-                         |  |  |
| Mrs. L.D.M. | Age 39       | 103      | Ex.                  | 1'       | 4'              | 7 Days                | 10'-8'                      | Compound hyp. astig., aniso. Prisms and ref. correction gave complete relief.  |  |
|             |              |          | Es.                  |          |                 |                       |                             |  |  |
|             |              |          | P.H.                 | 1/2'     | 0'              |                       | 1/2'                        |  |  |
| Mrs. R.D.D. | Age 52       | 221      | Ex.                  | 0'       |                 | 7 Days                | 1'-                         | R Mixed astig. L Simple Hy. Astig. Refractive correction & prisms result unknown   |  |
|             |              |          | Es.                  | 0'       | 1'-             |                       |                             |  |  |
|             |              |          | R.H.                 |          |                 |                       |                             |  |  |
|             |              |          | L.R.                 | 1/2'     | 1/2'            |                       | 1/2'                        |  |  |
| Mrs. M.D.   | Age 41 to 52 | 63-170   | Ex.                  | 5'       | 3'              | 7 Days                | 8'                          | Mixed astig., aniso. After wearing 3 prisms base out for 5 yrs. Much relief from prismatic correction.   |  |
|             |              |          | Es.                  |          |                 |                       |                             |  |  |
|             |              |          | R.H.                 | 1'       | 1'              |                       | 2'-1'                       |  |  |
|             |              |          | L.R.                 |          |                 |                       |                             |  |  |
| Mrs. F.P.M. | Age 17       | 899      | Ex.                  | 0'       |                 | 6 Days                | 3'                          | R Esotropia L Simple hyp. astig. Severe asthen. and headache. Previously intractably worse with glasses prescribed. Prisms gave complete relief.       |  |
|             |              |          | Es.                  | 0'       |                 |                       |                             |  |  |
|             |              |          | R.H.                 | 0'       |                 |                       | 1'                          |  |  |
|             |              |          | L.R.                 | 0'       |                 |                       |                             |  |  |
| Miss A.R.   | Age 25       | 2482     | Ex.                  | 0'       | 2'              | 7 Days                | 4'                          | Compound h.p. astig., aniso. Very troublesome esotropia and headache. No improvement till prisms were prescribed.                                      |  |
|             |              |          | Es.                  | 0'       |                 |                       |                             |  |  |
|             |              |          | R.H.                 | varying  | 0'              |                       |                             |  |  |
|             |              |          | L.R.                 | R to L   | 0'              |                       | 1 7/8'                      |  |  |
| Miss E.R.   | Age 12 to 14 | 56-98    | Ex.                  | 0'       | 0'              | 7 Days Broken         | 1'-2'                       | Compound hyp. astig., aniso. symptoms possibly due to latent acc. spaces.  |  |
|             |              |          | Es.                  | 0'       | 0'              |                       |                             |  |  |
|             |              |          | R.H.                 | 0'       | 0'              |                       |                             |  |  |
|             |              |          | L.H.                 | 0'       | 0'              |                       |                             |  |  |
| Miss V.S.   | Age 19 tp 18 | 2877     | Ex.                  | 6'       | 11'             | 7 Days                | 24'                         | Compound hyp. astig., aniso. Severe asthenopia, headache and ph. A little improved by prisms and exercise previous to occlusion. P.P.C bridge of nose. |  |
|             |              |          | Es.                  |          |                 |                       |                             |  |  |
|             |              |          | R.H.                 | 0''      | 0'              |                       | 0'                          |  |  |
|             |              |          | L.R.                 | 0'       | 0'              |                       | 0'                          |  |  |
| Miss W.V.   | Age 20       | 3503     | Ex.                  |          | 4'              | 7 Days                | 13'                         | Compound hyp. astig., aniso. Severe asthenopia Esoph. 6' - 10' in acc for 13" Relieved by ground glass Case still under observation.                   |  |
|             |              |          | Es.                  |          |                 |                       |                             |  |  |
|             |              |          | R.H.                 | 0'       |                 |                       |                             |  |  |
|             |              |          | L.R.                 | 0'       | 3/4'            |                       | 3'                          |  |  |

| Name        | Age          | Case No. | Kind of Heterophoria | Lat Exam | Subsequent Exam | Duration of Occlusion | After Occlusion Latest Test | Refraction & Remarks  |  |
|-------------|--------------|----------|----------------------|----------|-----------------|-----------------------|-----------------------------|---|--|
| Mr. E.S.G.  | Age 25       | 18-4     | Ex.                  |          | 0'              | 3 Days                |                             | Compound hyper. astig., aniso. Marked relief by prisms.   |  |
|             |              |          | Es.                  | 1'       | 0'              |                       |                             |   |  |
|             |              |          | R.H.                 | 0'       | 0'              |                       |                             |   |  |
|             |              |          | L.R.                 | 0'       | 0'              |                       | 1'                          |   |  |
| Miss O.G.   | Age 20       | 3692     | Ex.                  | 0'       |                 | 7 Days                | 5'                          | Simple hyp. Abduction 7 Headache and stomach trouble. Immediate and complete relief from headache by prisms       |  |
|             |              |          | Es.                  | 0'       |                 |                       |                             |   |  |
|             |              |          | R.H.                 | 1/2'     |                 |                       | 0'                          |   |  |
|             |              |          | L.H.                 |          |                 |                       | 0'                          |   |  |
| Mrs. L.W.E. | Age 23 to 42 | 35-193   | Ex.                  | 4'       | 4'              | 7 Days                | 8'                          | Simple hypermetropic astig. Relief for years by prisms and later by tenotomy. Prism exercise gave no relief.      |  |
|             |              |          | Es.                  |          |                 |                       |                             |   |  |
|             |              |          | P.H.                 | 0'       |                 |                       |                             |   |  |
|             |              |          | L.R.                 | 0'       |                 |                       |                             |   |  |
| Mrs. T.A.M. | Age 50       | 298      | Ex.                  | 12'      | 13'             | 6 Days                | 13'                         | Previous to occlusion glasses had been left off and exoph. was reduced to 3 - 4                                   |  |
|             |              |          | Es.                  |          |                 |                       |                             |   |  |
|             |              |          | R.H.                 | 1/2'     | 0'              |                       | 1 3/4'                      |   |  |
|             |              |          | L.H.                 |          | 0'              |                       |                             |   |  |
| Miss E.B.   | Age 24       | 1204     | Ex.                  | 20'      | 5'              | 7 Days                | 6'                          | R Simple hypermetropic astig. L Comp. Tenotomies of both externi and R superior rectus between 1st and 2nd tests. |  |
|             |              |          | Es.                  |          |                 |                       |                             |   |  |
|             |              |          | R.H.                 | 3'       | 0'              |                       | 4'                          |   |  |
|             |              |          | L.R.                 |          | 0'              |                       |                             |   |  |
| Mrs. G.S.G. | Age 39       | 2040     | Ex.                  | 2'       | 3'              | 7 Days                | 10'                         | Comp. Hypermetropic astig. Anisotropia Severe headache from childhood.  |  |
|             |              |          | Es.                  |          |                 |                       |                             |   |  |
|             |              |          | R.H.                 | 1/2'     | 1 1/2'          |                       |                             |   |  |
|             |              |          | L.R.                 |          |                 |                       | 3/4'                        |   |  |

peated if necessary, and the risk of over-correction thereby avoided. Case 89 shows the effect which can be produced by this method:

Miss E. M. B., age 24, the subject of life-long headaches and recently of other neuros-thenic symptoms, was wearing a 6-degree prism base in over each eye when I first saw her. Examination revealed a moderate amount of hypermetropic astigmatism, exophoria of 25 degrees and right hyperphoria varying from 1 1/2 to 3 1/2 degrees. After further trial with glasses tenotomy of the right superior rectus was done, leaving the marginal fibres uncut, reducing the error

from 2 1/2 degrees to 1 degree and of the external recti in two stages as described, reducing the exophoria to 4 degrees, with improvement in her asthenopic symptoms, but with very little influence upon her general condition. This was in 1912. During the present month, April, 1915, she again presented herself, showing exophoria of 5 degrees at 20 feet, and no hyperphoria. The right eye was occluded with a ground glass for a week and at the end of that time a hyperphoria of 4 degrees in the primary position and an exophoria of 6 degrees was shown. The hyperphoria was greatest down and to the right and was absent in the upper part of the field.

There are many other cases in this series in which the method gave valuable positive information which the examiner had been unable to obtain in other ways and which tended to the solution of the problem presented. There were a number also in which the results were purely negative, tending to eliminate, though obviously not absolutely eliminating, faults in the muscle balance as possible causes of the symptoms.

The use of this method suggests the following conclusions:

First—That the ordinary methods at any rate when used only for the short periods possible during a consultation may fail to reveal the kind and particularly the amount of error present.

Second—That while the method tends to show the true position of rest, the periods during which it is convenient to use it are insufficient to render the whole truth in the matter manifest.

Third—That while the constant use of prisms tends to bring out the heterophoria, prolonged oc-

clusion accomplishes this with much greater rapidity and is free from the objections urged against prisms.

Fourth—That the total exophoria may greatly exceed the abduction as measured previous to occlusion, and the same may be true of other forms of heterophoria.

## THE TONSIL IN ITS RELATION TO RHEUMATIC INFECTIONS.\*

By T. H. HALSTED, M.D.,

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THE work of Rosenow, Davis, Billings and others in this country, of Poynton and Paine in England, have done much to direct the attention of the profession to the invasion of the streptococcus and other infectious organisms through the tonsil to remote organs.

There is some uncertainty as to the functions, or all the functions of the tonsils. It has often been suggested that there is possibly an internal tonsil secretion just as there is of the thyroid, the hypophysis, the pancreas and other organs, but this has never been demonstrated. It is because of this possibility that complete enucleation of the tonsils has been argued against by many excellent laryngologists and internists, the fear being that by complete tonsillectomy the individual was being deprived of organs, important to the general economy, because of their manufacture, or possible manufacture of an internal secretion. Granting the possibility that the tonsils may produce an internal secretion, evidence of which, however, is wanting, but granting the possibility, it must be remembered that in removing completely the faucial tonsils, the patient still has much tonsillar tissue left, viz., the pharyngeal and the lingual tonsils, and the disseminated lymphoid tissue of the pharyngeal wall.

Tonsillectomy is comparable with the approved operation on the thyroid or the pancreas, in which not all these organs are removed, a portion being left to carry on their function.

Absorption takes place into the tonsillar substance through the intercellular spaces of the epithelial lining of the exposed surface and of the crypts. Bacteria, pathogenic and non-pathogenic do not readily pass through healthy mucous membrane, whether it be of the tonsil, of the mouth, of the nose, or of any other part of the body, and it is only when some local or constitutional disease is present lessening the normal resistance of the tissue, that absorption is likely to follow the implantation on its surface of the various disease producing bacilli and cocci.

The diseased tonsil which causes the most serious results, remote in other organs perhaps though they be, is the buried or submerged, often unseen tonsil, frequently small in size,

often, however, quite large, but because of its submergence behind the pillars it may appear on superficial examination to be quite small. Its free drainage is interfered with because the pillars covering over its free surface dam up the crypts, causing retention of secretion and favoring infective processes. These crypts, extending from the surface to the very bottom of the tonsil to the capsule, thus become veritable test tubes filled with the culture media, and, in which various bacilli and micrococci grow and develop, and from which infection into the lymphatics or into the general circulation takes place.

This is the feature in diseased tonsils which is most important and which, until very recently, has been entirely overlooked. The diseased tonsil depends then, not so much upon its size, as upon the condition and drainage of its crypts.

Bacteria of all kinds infest the mouth and throat. They rest upon the surface of the tonsils and enter the crypts, and from the latter may pass into the surrounding lymphoid tissue where the leucocytes destroy them, the normal tonsil acting as a hindrance to the further progress of these pathogenic organisms; when, however, the drainage of the crypts becomes obstructed, the micro-organisms develop unduly, the lining of the crypts becomes diseased, as does the lymphoid tissue so that the infection, the micro-organism may pass on through the tonsil to the lymphatics and cervical glands, or may enter the general circulation, the tonsil thus becoming an open gateway, a port of entry, for infection from the mouth to the deeper glands of the neck or to the remote parts of the body where the blood stream carries it or the toxins generated by it. It is, therefore, to be expected that many of the specific organisms producing infectious diseases, would find their easiest access to the body, and the general system, through diseased tonsils, because these organs, when their crypts are diseased, offer ideal conditions for the propagation of bacteria, and for their egress through the broken down barrier into the blood and lymph channels beyond. The tonsils are by no means the only port of entry for the invading organisms of these infectious diseases. Pyorrhoea alveolaris, Riggs disease, the specific cause of which seems to be in some doubt, is one of the most prevalent diseases affecting the human race. This disease of the teeth is easily recognized, but its significance is commonly overlooked by both the medical practitioner and the dentist, and yet it is a disease of such frequency and importance that an examination of the teeth to discover its presence or absence should be a routine matter in the examination of every patient; certainly it is as important to look at and around the gums and the teeth as it is to examine the tongue. The appearance of the tongue may give valuable information to the digestive tract or may tell us at a glance of present or past constitutional disease, but disease of the tongue itself is not often the etiological factor of other

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and more remote infectious diseases, as the diseased condition of the teeth and the alveolar mucous membrane are. Superficial examination of the teeth and gums is not sufficient to exclude them when one suspects that they are causing infective processes in other parts of the body. An X-ray examination may be required before the teeth can be excluded. Some of the finest appearing teeth may be found to be, through the X-ray, the source of infection in an arthritis, for instance.

While my paper deals with the tonsil, it must not be forgotten that much of what is said regarding the tonsil as a local source of infection can also be said regarding the teeth, especially in cases of chronic infectious arthritis. In fact, increasing experience leads me to believe that the teeth and the tonsils are usually associated as sources of infection in chronic cases. The teeth should be investigated as well as the tonsils in these cases.

Besides diseased teeth and gums, suppuration in the nasal accessory sinuses and the middle ear, chronic cholecystitis, chronic appendicitis, and any focal point of suppuration within the body may afford the starting point for any given infection, providing the specific organism is there present.

The tonsil, however, is the most usual port of entry for the pyogenic organisms causing rheumatism, meaning by this infectious arthritis, with its many complications of endocarditis, pericarditis, nephritis, chorea, pleurisy and neuritis, tuberculosis especially of the cervical glands and the joints as well as of the pleura and the lungs, diphtheria, scarlet fever and frequently pneumonia as well as many diseases due to the pneumococcus, and the organisms of Vincents Angina. Other infections than these begin with the tonsils, such as appendicitis and cholecystitis, the terminal disease in the appendix or the gall bladder having resulted from an earlier tonsillitis from which the streptococcus migrated through the blood or the lymph channels to these organs.

The tonsil is not only a port of entry for these various pathogenic organisms but it becomes a carrier or a host for them, resulting in causing repeated auto-inoculations of the individual as well as through contact, spreading the disease to others. That this is so in diphtheria is well known, many persons being free of this disease clinically, yet through the diphtheria bacillus lodging in their tonsils, they become disseminators of the disease to others.

Rheumatism and tuberculosis are in many important respects comparable diseases. Both are very wide spread throughout the world, affecting all ages and classes.

It has always been a clinical observation that a close association existed between sore throat or tonsillitis and rheumatism. The sore throat usually preceded the attack of rheumatism, sometimes by a considerable time, again by but a few

hours. A comparatively slight tonsillitis might be followed by a malignant endocarditis and death within 48 hours. It has been taught in the text-books for ages that one of the predisposing causes of quinsy was rheumatic diathesis. It is only since the real nature of rheumatism has been suspected that the part played by it in this disease has been understood.

Many bacteriologists have been working for years, fifteen at least, to discover the specific micro-organism of articular rheumatism. In their recent book "Researches in Rheumatism" Poynton and Paine, of England, show the gradual evolution of these researches, beginning in 1898 and extending down to the present year, ending with the apparent proof that specific organism causes rheumatism. It belongs to the streptococcus family, is a streptococcus which under certain conditions become a diplococcus and and which they call a strepto-diplococcus and to be more specific they speak of it as the "micrococcus rheumaticus." It is apparently the same organism which Wassermann in Germany and Davis in Chicago have isolated as a specific organism of rheumatism, a hemolytic streptococcus.

Various observers, clinicians and bacteriologists are agreed that the most common habitat in the human body for this particular streptococcus, is the tonsil crypt. Once it finds a lodgment here, it is likely to continue to remain and develop. It may remain quiescent; apparently harmless for months or years, when suddenly the lowered vitality of the individual invites an invasion, resulting in an acute sore throat or tonsillitis with at times an extension through the blood to the joints and tendon sheaths, causing acute articular rheumatism, or to the valves of the heart, an acute endocarditis, with ulceration and vegetations, or to the pericardium producing pericarditis, to the kidneys causing an acute nephritis, or again it may attack the nerve sheaths producing a neuritis, to the brain causing chorea, to the muscular fascia causing muscular rheumatism, lumbago, etc. Poynton and Paine cite a case of appendicitis, due to this specific organism of rheumatism, which had gained access through the tonsils. In the same way might be explained cholecystitis, the original infection coming through the infected tonsil.

Davis examined the tonsils in 113 cases of rheumatism affecting the remote organs. He found the specific organism present in the tonsil crypts in all of the 28 cases of arthritis (some acute, some chronic), it being the predominating organism in 25 of the 28 cases. Choreia was present in three of the cases. In ten cases of nephritis, mostly chronic, the organism was present and the predominating one in the tonsil in nine cases. Rabbits were inoculated intravenously with cultures from all these latter cases, producing joint or tendon sheath lesions in all of them. Of ten cases of endocarditis, nearly all of which either had or at some previous time

had had an arthritis, the streptococcus of rheumatism was a predominating organism in six cases, the pneumococcus in four. In a fatal malignant endo-carditis, in which the pneumococcus was present in the blood, pericardial and pleural sacs, it was found in almost pure culture in a deep crypt of a small submerged tonsil. In sixty-one cases of simple hypertrophied tonsils, most of them giving a history of repeated acute tonsillitis, the hemolytic streptococcus was found as the predominating organism, in many of them in pure culture, in fifty cases and was found in small numbers in the other eleven, in these latter the pneumococcus, the bacillus of influenza or the diphtheria bacillus predominating. Seven strains of streptococci from the recurring acute cases, injected into rabbits produced arthritis in every case, while four strains of pneumococci similarly injected produced negative results.

Billings in a recent article, investigating the subject from the clinical side particularly, considers the tonsil as the most frequent focus from which rheumatism, acute and chronic, with its various joint and cardiac lesions, has its beginning. In the article referred to he gives the history of many cases in which this relationship existed. He says "The abundance of lymphoid (tonsillar) tissue in child life probably accounts for the frequency of infection like rheumatic fever, diphtheria and tonsillitis in earlier periods of life. Chronic focal infections, latent in unsuspected cases, have not been generally recognized." And again "there can be no other reason for prevalence of rheumatic fever in children than the frequency of local infections in the throat and nose. Quite as frequently children have endo-carditis without other systems of rheumatic infection which has its source in the throat."

For a number of years the writer has been removing, with increasing frequency, tonsils from individuals, mostly adults, because of chronic articular rheumatism, rheumatic endo-carditis, episcleritis and chorea, long before the specific organism was isolated, most of the cases having been referred for operation by the medical attendant. From the clinical experience and excellent result of these operations, he has long been convinced of the connection between the tonsil and the rheumatic affection. Speaking generally, the tonsils have most often been the submerged ones, rather than the large freely projecting and so-called enlarged tonsils, although these latter have often been removed for this reason and with good result. Often the tonsils have been so small that both patient and attending physician have, prior to operation, been skeptical as to there being any tonsil present. Operation, however, always disclosed a tonsil of larger size than appeared on the surface and invariably showed diseased pus-containing crypts. In the great majority of cases, the improvement was most striking, the disease being seemingly

cured in many, arrested in others, while it produced no favorable result in but a small minority, these latter being cases of well advanced arthritis deformans, or rheumatoid arthritis. In the unimproved cases there was doubtless some other undiscovered focus, because in an old and active case of rheumatism, there must be, and there are many localized infected areas in the joints, in the heart valves, in the gall bladder, etc., which may not be reached, and about diseased teeth so often inexcusably overlooked, so that in such cases the removal of the tonsils may shut off but one of the several foci.

Long before the etiology and pathology of chorea was known, it was well known to laryngologists that children having this disease were greatly benefitted and often cured following tonsil and adenoid removal. Such was my personal experience. The reason why this was so is clear enough now that we know that chorea is a result of a rheumatic infection of the nervous system, and the removal of the infected tonsil removed the focus of infection and closes the gateway through which these specific organisms reached the blood and the nervous system.

Again quoting Billings, it can be said "that there can be no doubt that the insidious, slow, degenerative processes which occur in many patients who arrive at the meridian of life are due to slow intoxications from chronic focal infections variously located"—one of the most frequent of such focal infections being in the tonsil.

#### A TYPICAL CASE OF INFECTIOUS ARTHRITIS.

*Case 1.*—Mrs. T., wife of a physician, 41 years old, living in a neighboring county, was brought on a stretcher to the Women's and Children's Hospital, on Jan. 23, 1915, to be under the care of Dr. Elsner. She was suffering from an infectious arthritis of unusual severity.

She gave a history of an attack of acute rheumatism in August, 1913, while living in Brooklyn, where her husband was practising medicine. She was in bed a month with this attack, the parts chiefly involved being the hands, shoulders and larynx, voice being lost. No fever. The aphonia lasted six months. In December, 1913, she consulted a Brooklyn laryngologist, who diagnosed rheumatism of the throat, prescribed salicylates without improvement. Removed some of the lingual tonsil but said the faucial tonsils were normal. Aphonia not improving, he diagnosed later hysterical aphonia, insisting there was no other trouble in the throat. Rheumatism of hands and arms steadily increased so that she was in bed all of March, 1914. In May they left Brooklyn for the country up State because of her ill health. She rapidly grew worse and from May to September was confined to bed and suffered perfect agony in her joints. In August an attack of pleurisy (left side). Was able to be up and walked a little in October, but on October 26th, an attack of pleurisy on right side developed and from that date on she



has been confined to bed constantly, all joints becoming involved and swollen. The temperature has varied more or less constantly since last May from 101° to 104° F. with at times an intermission of ten days with a temperature of 99° to 100° F. She lost sixty pounds since coming to the country from Brooklyn.

Dr. Elsner studied her case for a week. The joints of wrists, hands, ankles and knees chiefly involved. They were all greatly swollen, exquisitely painful. Temperature varied from 100° to 104°. Diagnosis was an infectious arthritis and a hunt was made for a focal infection. I was asked to examine her throat, tonsils particularly. Examination revealed tonsils seemingly healthy and so small that a casual observer might have questioned there being any at all. However, with a tongue depressor applied firmly behind the tonsil, and expressing it outward from its bed, a few drops of clear yellow pus exuded from the supra tonsillar crypts of one side. This was cultured, the organism proving to be a diplo-streptococcus. Throat and nose otherwise normal. Teeth appeared to be remarkable sound and free from any disease. However, the teeth were examined by X-Ray by Dr. Coon, films being made of all the molars and the discovery made that about the roots of four there was unmistakable evidence of an infectious process going on. Here then were two distinct foci of infection, the tonsils and the teeth, both foci being hidden and disclosed only by careful examination. Examination of other parts of the body by others failed to discover any other local infection. On January 30th, a week after entering the Hospital, I removed the tonsils under novocain anesthesia, finding them, instead of being small as they appeared to be, quite large, their crypts full of odorous pus. Because of their external semblance of perfection, it was only after much urging that the patient's husband, Dr. T. consented to allow Dr. Oliver to extract the teeth shown by the X-Ray films to be diseased. He finally consented and the teeth were extracted under ether and proved to be diseased as the picture showed.

There followed immediately a marked improvement, the septic temperature, which had existed for months, becoming nearly normal within 24 hours and staying there ever since, with the exception of one flare up two weeks after operation, when following the use of atapan, it suddenly jumped to 104° but became normal in 36 hours, remaining there till she left for home. The day following the operation she was able to close her hands for the first time in six months, no pain in fingers. In 48 hours the swelling was marked less in hands and ankles. To make a long story short, she rapidly and steadily gained, swelling and pain in joints subsiding until she left the Hospital on March 3rd, in a condition better than she has been in since her first attack of rheumatism in Brooklyn a year and a half ago.

It is of interest, as bearing on the possible contagiousness of this disease, to say that the patient's father and mother both had rheumatism and lived with her for the two years' prior to her becoming herself sick. Her mother had Brights Disease and rheumatism until a year and one-half ago, when her teeth were extracted following which her rheumatism ceased. While this patient has been much improved, yet she is far from well, and has recurrent exacerbations and doubtless there exists some undiscovered focus of infection.

This case has been cited somewhat in detail as being typical of a number, almost identical, in that improvement equally striking followed the tonsillectomy alone or the tonsillectomy and teeth extraction combined. Often the tonsils have been removed first, the removal of the teeth following at various intervals. Latterly I have advised the tonsil and the teeth operation under the same anesthetic. The other morning, for instance, I removed the tonsils while Dr. Oliver extracted several teeth from a young college girl, who had become incapacitated and bed ridden because of an infectious arthritis of her feet. Following this operation I did a tonsillectomy in a child of eight, with diseased tonsils, which was believed to be the cause of her chorea, with heart murmurs, for which she was in the hospital.

I venture the suggestion that time may show that rheumatism, like tuberculosis of the lungs, may be mildly contagious, that is to say, that a person with chronic rheumatism or subject to recurrent attacks of acute rheumatism and harboring in his tonsils the specific streptococci which produce rheumatism, may infect in the act of kissing and coughing another susceptible person with susceptible tonsils living closely in contact with him, as for instance, in the case of of husband and wife—mother and child.

It is a very simple matter to overlook frequently the presence of a diseased tonsil. It is usually quite small, may be discovered only by drawing forward the anterior pillar or better still by getting underneath the bed of the tonsil with the tip of the tongue depressor placed in front of the anterior pillar and pressing outward and backward, the tonsil is displaced and at the same time there may be expressed from one or several crypts or follicles quite a mass of semi-yellowish, ill smelling, cheesy concretions. If examined bacteriologically this matter will be found to contain bacteria of various kinds, including varieties of the streptococcus, staphylococcus, pneumococcus, etc., as well as epithelial debris. At times there exudes a thin yellowish green pus, which may and usually does contain the streptococcus in almost pure culture. Then again, the tonsils, especially in men with chronic rheumatism, are often quite large, hard, firm, decidedly red and angry in appearance. Probably the least harmful tonsil, from an infection point of view, is the fairly large, freely protrud-

ing and soft tonsil with large open crypts, seen most commonly in young children.

The treatment of such tonsils as are discussed in this paper is surgical, and complete enucleation, tonsillectomy, is the rational operation. The removal of a part, leaving the so called stump, is unscientific and is likely to leave the patient worse off than before the operation, because the deep, diseased part of the crypts is left behind, adhesions following the operation partially sealing the crypts and making the drainage worse than before.

## PYELITIS: ITS CLINICAL SIGNIFICANCE.\*

By EDWARD JUDSON WYNKOOP, M.D.,  
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**T**O the practising physician certain conditions are often thought of as being of rare occurrence until in the busy rounds of work the discovery is made that these certain diseases, looked upon as unusual, seem to occur with more frequency than formerly.

Then the thought often comes to us as to whether the disease is really more prevalent or whether it is now recognized where before the symptoms were overlooked entirely.

Time works many changes with our creeds and often symptoms that represented some disease which were thought to be rare have, through our broader vision, forced themselves to be considered of much more frequent occurrence than was formally believed to be the case.

It is not that pyelitis is such an important or unusual disease that the subject is brought to your attention but that in many instances it occurs unrecognized and may complicate many of the ordinary children's diseases.

While it may be a serious disease, it is usually not so considered, but its failure of recognition may cause many anxious moments, due to its varying symptoms.

The failure to recognize and properly treat a case of pyelitis, may cause considerable permanent kidney damage.

The recognition of a well defined ordinary case is not so difficult, but when atypical symptoms present themselves, an early diagnosis may be a matter of some difficulty.

As a matter of fact, the first realization of the true condition of affairs may thrust itself forcibly upon one by the urinary findings, where no thought whatever was given as to the possibility of an infection of the genito-urinary tract. It is just this thought that is uppermost in my mind, namely, the pointing out and emphasizing the unusual symptoms so that an obscure pyelitis can be detected promptly.

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

It might be well first to discuss the symptoms that usually occur and then emphasize the ones that are only occasionally met with and then only to be overlooked.

Pyelitis is considered a disease of infancy and childhood, the most common age is supposed to be under three years. It may occur in babies a few months old. It is generally considered a disease of the diaper period.

The recorded cases show a much larger number in girls than boys. This is, of course, to be expected, when one considers how much easier is the chance of infection of the genito-urinary tract in girls, at the diaper period, than in boys.

It is supposed that most of the infection occurs through the urethra and bladder. However, many cases occur through the infection being carried in the blood or through the intestinal tract. This would seem to be particularly true in pyelitis, occurring in boys where the chance of infection through the urethra is remote.

Pyelitis is also spoken of as cystitis or pyelocystitis. The most frequent cause is infection with the Bac. Colli, Com. as first proved by Escherich, who termed the infectious process a Coli-cystitis. It may, however, be caused by any of the infectious organisms.

Holt states that the most frequent local cause of pyelitis is irritation from renal calculi. He also states it may be associated with congenital malformation of the kidneys or urethra with renal tuberculosis and renal tumors.

Pyelitis may complicate the infectious disease or may occur as a primary disease. With inflammation of the pelvis of the kidney there is undoubtedly some true nephritis, especially with the more severe types of pyelitis. With pyelitis the bladder may be inflamed but cystitis is not necessarily an accompaniment of the disease. This statement is doubted by some authorities who hold that the bladder is always involved at some time during the course of a pyelitis.

This may be true when infection takes place through the urethra and bladder, as it does in so many cases in girls. This mode of infection cannot so easily take place in boys and Trumpp's suggestion of direct extension from the intestines to the bladder or through the blood, seems more logical.

Holt also states that pyelitis may occur from an extension of inflammation from around the kidney or from an abscess opening into the kidney.

*Symptoms*—Fever is usually present and the occurrence of a high fever with remissions to the normal without assignable cause should favor pyelitis. A chill usually ushers in the attack but though the fever may persist for some days, there may be no recurrence of the chill. Chills may be absent and the fever low. However, the chills may recur during the attack, especially at the beginning of a relapse.

It is quite usual for the fever to be fairly

high, 103-104, for several days and then suddenly drop to normal and remain there a few days, only to go shooting up again after several days of normal temperature.

Fever may not always be present. Cases have occurred in which there was no fever but these cases are unquestionably rare. A low fever is often times overlooked. In the relapsing cases, the chill may not be repeated, even though there may be several well marked relapses with high remitting fever.

If the fever continues for any length of time then the child begins to show the constitutional effect but it is surprising how sharp and severe an attack may be, with high fever, and the child seems to show no ill effects whatever. This is particularly so when the pyelitis is a primary infection.

In those cases of a secondary nature, the prostration accompanying the fever may be marked. In any case of pyelitis the fever is usually irregular, and after a few days the normal temperature is reached. It may remain normal a few days and then suddenly shoot up again. These periods of normal temperature, occurring between periods of fever, are, as before stated, very characteristic of the disease.

The chills and fever may simulate malaria. In mild cases the temperature may not go over 102 and the general health may not be seriously impaired. Many cases show little or no fever, with almost no constitutional disturbance and one is frequently surprised at the absence of all physical signs of disease except the positive evidence found in the urine.

*Pains*—Pain is present in a certain number of cases. The character of the pain resembles, in many cases, intestinal colic and owing to the presence of some trival digestive derangement, at the time of the attack, the possibility of any disturbance of the genito-urinary tract is lost sight of.

Pain may be referred to the kidneys or bladder. Many times its location is very hard to determine. The point must not be lost sight of that in many of these attacks some intestinal derangement is usually present and yet the pain may be due to the inflammation of the genito-urinary tract. Pain often accompanies urination or occurs directly after and this symptom alone is very suggestive. In a fair proportion of cases it is possible to obtain a history of pain referable to the act of micturition. Tenderness over the bladder or kidney may be present.

*Anæmias*—Anæmia is practically always present. It may be severe, depending upon the length of time the fever has lasted and its severity.

It is, of course, characteristic of many other diseases, but when associated with temperature of an irregular type of unexplainable cause, these two symptoms should make us at least suspicious of a possible pyelitis.

This anaemia is very marked in children who have been suffering with a high fever for a considerable period of time and these cases show a serious cachexia, loss of muscular tone and weight, especially in the severe relapsing types.

A leucocytosis is present always according to Groat, the leucocytosis being marked in a pyelitis but only slightly so in cystitis.

Staining of the diapers with a peculiar yellowish tinge is present in some cases and has been especially emphasized by Koplik.

The urine is acid, turbid, contains pus, albumen and sometimes casts and blood, depending upon the length of time the infection has been present and the severity of the urinary disturbance. Bac. Col. Com. or some other organisms are usually present.

The urine is scanty in the acute attack and more copious after the acute symptoms have subsided.

The amount of albumen is relatively much greater in proportion to amount of pus present in a pyelitis than in a cystitis.

In many cases the ordinary features of the urine are overlooked and without a chemical and microscopic examination the symptoms may entirely escape notice.

In fact, the examination of one specimen is many times unsatisfactory and only by a careful chemical and microscopic examination of the specimen taken from the 24 hour urine will a definite conclusion be reached. Only by a complete examination of the urine is a positive diagnosis made, no matter how clearly defined may be the other clinical features. Therefore the urinary findings must confirm the diagnosis.

And it might be well to again call attention to the fact that in cases where the urine is suspected it may be necessary to constantly subject all specimens of urine to a complete chemical and microscopic examination before the findings are conclusive.

The atypical symptoms of pyelitis will be touched upon briefly and we should always bear in mind that in those cases showing almost no fever or other typical sign, there will be some one feature at least that will point out a warning, as to the true nature of the disease, if we are on the lookout.

In the question of the diagnosis it is not so much the difficulty of detecting the signs of a pyelitis as it is a willingness to take notice of the warning when they occur and be susceptible to conviction.

It has always seemed to me that when a pyelitis had persisted unrecognized and untreated for some time, relapses were very common and the pyelitis was exceedingly stubborn in yielding to treatment.

Pyelitis, though occurring more often in girls, occurs frequently in boys, especially at the nursing period. Look carefully into so-called cases of intestinal colic, with low temperature, slight

abdominal pain or with frequent urination occurring in male babies.

Failure to gain in weight and occasional temperature of 101-102 in the evening, with normal temperature most of the day and variable appetite, may not be due entirely to intestinal disturbance.

Bear in mind the fact that such a condition as pyelitis can exist and always expect it when the symptoms assume an indefinite character.

Many cases are recorded where all clinical signs have escaped detection until a careful urinary analysis was made.

In these cases if fever, pain, anaemia, frequent or painful urination occurred the symptoms were so slight as to escape notice.

Therefore, my warning is, in all cases, whether male or female infants, showing that there is some hidden focus somewhere that is causing trouble, think of pyelitis, though the typical symptoms may be absent.

In every case of intestinal colic in a nursing baby think of the possibility of a pyelitis. In low fever with indefinite symptoms watch the urine constantly.

Therefore I would again warn you to make complete and thorough urinary analysis in all cases, a practice which is too often neglected.

By strict attention these mild attacks of bowel disturbance, with a little fever, that seem to arrive from no cause whatever, may prove to be pyelitis. In cases of abdominal pain, although even very slight, realize that there are other organs besides the stomach and intestines that may cause trouble.

A review of pediatric literature does not contain as many references to pyelitis as it would seem to warrant.

Most authors mention it as a cystitis, cyst-pyelitis or pyelo-nephritis, but from personal experience it seems as though this disease should receive more attention than it has, for, as experience comes with years, so does the practical recognition of the prevalence of pyelitis far in excess of what we have been taught to believe possible.

The treatment will be mentioned briefly. Urotropin and Potassium Citrate are probably the most used remedies. Personally Potassium Citrate has been more effective than Urotropin. Plenty of water must be given the patient, and it is also desirable to render the urine alkaline.

A warning is here again issued that relapses are common, especially in long-continued, unrecognized cases and the severity of the symptoms may be astonishing. Attention, however, to every detail of right living, that is so often neglected in these children, together with proper medication, will usually finally effect a cure.

It has often been a source of serious concern to see these little ones who have suffered from the ravages of an unchecked pyelitis, present themselves in an emaciated and almost hectic condition.

Again let me warn you in regard to treatment. Do not neglect the general hygienic measures that are so important to improve the child's resistance. All measures may fail to overlook a chronic constipation, improper diet or lack of sufficient fluids in the system.

Tonics are of use in certain cases. So far the vaccines have not proved to be as effective as hoped for.

In presenting this paper, the points that seem to me to be most important are these:

First—Pyelitis is without doubt a much more common disease than was formerly supposed.

Second—Its occurrence in male babies is much more frequent than is usually considered possible.

Third—Its symptoms are, in mild and atypical cases, easily overlooked.

Fourth—In all diseases of infancy and childhood frequent and complete chemical and microscopic examinations of the urine should be made.

Fifth—In a condition which presents unexplainable symptoms, always think of the possibility of a pyelitis.

Sixth—Treatment has to be persisted in for a long time, as pus will be present in the urine, as a rule, after all clinical symptoms have subsided.

Seventh—Relapses are very common and oftentimes these cases are very stubborn in yielding to treatment.

#### *Discussion.*

DR. WALTER LESTER CARR, New York City: We are agreed that in most instances pyelitis is an infection of the colon bacillus type, but the peculiarity of the invasion requires some consideration, as it does not always seem to be associated with intestinal disturbance that attracts attention, nor does it always show itself after a colitis, of which we have record. According to my own observations many of the cases are seen after influenza, and yet cultures of the urine show a pure colon infection. Kelly and Burnham believe the common origin of pyelitis is through the blood stream and the ascending infection is rare. Heretofore reports have given a preponderance of cases in females, but careful observation for the past few years has shown there are more cases among males than were formerly noted. As these male cases could hardly come from an ascending infection so frequently ascribed to the female children, it would seem wise for us to study more carefully the influence of the blood stream infection and the direct invasion of the blood and ureter from the intestine. Of course, we have a small number of cases of pyelitis due to stone in the kidney or other mechanical causes.

At this time I believe that we are getting satisfactory results in treatment, both by the free use of alkalis and by urotropin, but I am a little in doubt as to the end results in these children. I believe the only way to record them properly is by examinations of the urine, extending over a

prolonged period. I am suspicious that there may be re-infections or re-invasions. Naturally the care of the intestine is of the greatest importance, both during the acute pyelitis and in the intervals between the attacks. During the acute process I use intestinal irrigation, and such laxatives as I feel are called for. The elimination of milk from the diet if there is constipation or foul stools, is most important, and the administration of castor oil at such a time is unquestionably of benefit.

Regarding the use of vaccines I have not yet determined their full use, although they will without question limit some of the symptoms of infection. Pyelitis is so erratic that it is often difficult to determine the effect of any particular form of medication.

In closing I would urge upon all practitioners more careful routine examinations of the urine in infants and young children who have intestinal disturbance, chills, fever and prostration.

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## CAN PNEUMONIA IN CHILDREN BE ABORTED?\*

### A Preliminary Report.

By T. WOOD CLARKE, M.D.,

UTICA, N. Y.

JUST as with the adult the decrease in tuberculosis has left pneumonia, as Osler says, "the captain of the men of death," so with the improved milk supply and better sanitation and consequent decrease in diarrheal and acute contagious diseases, has pneumonia in recent years become relatively more important as a cause of death in childhood. Notwithstanding the relative frequency and high fatality in infancy, the advance in our knowledge of the therapeutics of this disease has been relatively slight. In spite of the work of Lamar and Cole of the Rockefeller Institute, of Cruikshanks and many other investigators, we have as yet to find a therapeutic measure by the use of which we can feel the confidence of shortening the course of the disease, and pneumonia remains today as it was in the Middle Ages, a self-limited fever, which must run its course, and the therapeutics consists in supporting the heart and general strength until the natural reaction of the body can stamp out the infection.

In the present state of our knowledge of this dreaded disease, therefore, one is justified in following any sign post which may seem to indicate a possible road to a specific medication of pneumonia. It is for this reason that I feel warranted in taking up your time today in relating to you an experience I have had in Utica during the past two years. I admit that my series of cases

has been too small to justify a definite statement, but I wish to make this preliminary report, which to me, though not convincing, is at least suggestive.

In June, 1913, I was called late at night to see a boy in the Hebrew quarter, and, as I was told that it was a case of bowel trouble, I took with me a small pocket medicine case only. I found a lad, seven years of age, with a temperature of 104 degrees, restless, flushed, with rapid respiration and slight dilation of the alae nasae. The only physical signs were slightly impaired percussion note and somewhat distant breath sounds over the upper right back. The history was that of sudden onset two days before, with a high fever, which the physician in attendance had pronounced due to auto-intoxication. He had given several rectal irrigations without noticeable improvement. The child's appearance warranted a tentative diagnosis of pneumonia. A firm believer in the theory that a "masterly inactivity" was the proper course to pursue in the early stages of pneumonia, I nevertheless appreciated that with the class of people with which I was dealing some medication was necessary. At that time I was much interested in the work of Cushing and Crowe on the excretion of formaldehyde into the meninges after the administration of hexamethyleneamine and later work on its excretion into the nasal mucous membrane in the treatment of rhinitis. Having some tablets in my case, I decided that this would make as good a placebo as anything, and it might have some beneficial influence by being excreted into the alveoli. I left a mixture containing two grains to the dram, a teaspoonful to be administered every two hours. The following morning I found a definite area of tubular breathing two inches in diameter over the area of dulness, but to my surprise the boy's temperature was normal, his pulse and respiration slow, and he was feeling well and lively. The temperature remained normal. In two days the consolidation had cleared up, and the boy made an uninterrupted recovery. I thought it was a coincidence, that I was dealing with a spontaneously aborted pneumonia in which the crisis happened to come four hours after the administration of a new drug.

However, in the absence of any better method of treating the disease, I determined to try it again, and I have been amazed at the results. I wish briefly to report two typical cases.

W. B., aged three years, was taken ill early one Monday morning last fall. I saw him at 2 o'clock on that afternoon. His temperature was 104.6 degrees, rectal, pulse 140, respiration 64. He was restless and coughing. There was an expiratory catch and the alae nasae were working. There was no dulness, but scattered crepitations throughout both lungs. He looked decidedly ill. Hexamethyleneamine was started and a simple cough mixture. The next morn-

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

ing the temperature was 102 degrees, rectal. He was still breathing rapidly, but the pulse was slower. That evening (Tuesday) the temperature was normal, and on the morning of Wednesday, the third day of the disease, he was playing with his toys and lustily demanding food. I made one or two more visits for form's sake, but the child was well.

W. H., aged eight years, an inmate of the Utica Orphan Asylum, was taken acutely ill on the afternoon of February 7, 1915. The bedside notes show that through the 8th the temperature had varied from 104 to 104.6 degrees, the pulse from 120 to 140, and the respiration from 30 to 44. He was semi-conscious or delirious, very restless, and having involuntary bowel movements. He held his neck rigidly and this and the marked cerebral symptoms made the attending physician suspect meningitis, and on February 9, the third day of the disease, the author was called in consultation. The condition just described was found, but in addition a small area of clear tubular breathing high in the right axilla. The diagnosis of pneumonia, pseudomeningitis, was made, a poultice applied, and hexamethyleneamine, gr. ii every two hours ordered. The temperature at noon was 102.6 degrees, and at 4 o'clock 104 degrees. The nurse's note says: "Patient very restless this afternoon, but not delirious. On February 10, the temperature dropped to 100 at noon and rose to 101.6, rectal, at 7 in the evening. The pulse varied from 88 to 104, and the respiration remained steadily at 24." The bedside notes for this day say: "Slept a great share of the morning; complained of pain in side; slept in naps in afternoon." On February 11 the morning temperature was 98.6 degrees, the pulse 88 and the respiration 20. At 8 in the evening the temperature was 101 degrees, pulse 100, respirations 20. The note says: "Patient much better today; slept fairly well." On February 12th, 13 and 14th the highest temperature was 98.8 degrees; the pulse had dropped to 70 and the respirations to 18 and 20. In brief, an acutely ill child, with apical pneumonia, and marked meningeal symptoms, recovered by rapid lysis on the third and fourth day, the improvement starting within four hours after the first administration of hexamethyleneamine.

I shall not take the time of this society with more cases, but will simply state that during the past two years in every case of lobar or bronchopneumonia in children I have seen in my own practice and in consultation, I have pushed the hexamethyleneamine to the limit, and with one exception the results have been gratifying. The one exception was an infant four months old that I saw in private practice, on the third day of the disease, suffering from bronchopneumonia. In spite of all I could do this child went from bad to worse and died on the eighth day. This case has delayed the presentation of this preliminary report for a year.

With this one exception, in every one of the thirty odd cases of pneumonia in children under my observation during the past two years, the temperature has begun to drop within a few hours of the starting of the drug, and from twenty-four to forty-eight hours the patient has been well. I have made it a point after seeing a case in consultation to call up the attending physician the following day and ask about the child's condition. Invariably the answer has been "He is a great deal better," or "He is all right today." In a good proportion of these cases this has happened during the first four days of the disease.

I have gone one step further, and have prescribed the drug in somewhat smaller doses in all cases of influenza, measles and whooping cough from the onset. Whether or not due to this prophylactic dose, I am not prepared to say, but the fact has been noticeable that in none of the cases so treated has any pulmonary complication developed. Furthermore, when a child apparently with pneumonia failed to respond to the drug within twenty-four hours, I become suspicious of something more than an uncomplicated pneumonia, and redouble my vigilance in searching for empyaemia, as a result of which I have identified this complication when but a few ounces of pus had formed. When an empyaemia has started, the drug seems to have little or no effect.

In giving the drug, care must be taken that it is given in plenty of water or milk, and that as much water as possible is taken besides. Even with the greatest care one will at times get strangury or slight hæmaturia. When this occurs, it has been my custom to discontinue the drug and give sodium bicarbonate, and, beyond a few hours' discomfort, no untoward effects have resulted.

In presenting this preliminary report on the use of hexamethyleneamine in the pneumonias of childhood, I make no claim to have found a sure cure for the disease. My one fatal case alone is enough to make that impossible, and I have not seen enough cases to warrant any sweeping statement. The experience, however, has convinced me that the use of this drug, early in the disease, has in at least a certain number of cases aborted the attack, and I think the physicians of Utica and Central New York with whom I have seen such cases in consultation are converted to the idea that they are not justified in relying on expectant treatment and a "masterly inactivity."

The present investigation has been made entirely in private and consultation practice, with incomplete records, and often inefficient means of observation. If this preliminary report will induce some of my professional confreres with large hospital services in pediatrics to give this drug a fair tryout in the treatment of the pneumonias of infancy and childhood, it will have accomplished its purpose.

## SOME PRACTICAL QUESTIONS ON METABOLISM.\*

By CHARLES G. STOCKTON, M.D., and  
JOHN L. BUTSCH, M.D.

BUFFALO, N. Y.

**I**N order not to serve our patients with a ready-made treatment to all, one must make minute and detailed studies of each individual case before one can order for each a mode of life and a diet which is best suited to his individual case.

This is especially true in cases which come under the head of metabolism. The exact chemistry of these cases is shrouded in mystery, yet we have some light, which, thanks to such workers as Lusk, Mendel, Chittenden, Folin, Schittenhelm, Jones, Kossel, Abderhalden and others, is increasing. The close study of the work of these men gives the clinician new points of attack and new methods of treatment.

Today no clinician of note places his patients on any hard and fast superficial treatment, but he takes into account the variety of clinical pictures as he sees them in his patients. He takes his patient into his private clinic and tests him until he has found the diet, medication, and mode of life which is best for that individual case. After finding this he does not turn his patient loose, but continues to study him, making control tests until such time as the patient shows no abnormal phenomena when left undisturbed for a period of a year or two. Such work is good for the light cases of metabolic disturbance as well as the severe ones, but of greater importance in the former, because much can be gained by correct treatment and more be lost by the wrong.

We know, for example, there are no diabetics who show a constant degree of tolerance for carbohydrates. This tolerance varies with the kind of carbohydrate, how the carbohydrate is given, whether or not muscular activity is great, and whether only one kind is given or a mixed diet. The other kinds of food given at the same time makes the profoundest difference, as well as the total caloric value of the food for the day. Especially the amount and kind of proteid, is of greatest importance. To illustrate, we cite the case of a young man, age twenty-one, who came for observation, with a tolerance of 12 grams, on a mixed diet and whose tolerance would not increase except very slightly, until proteid in the form of meat was restricted and egg proteid given. On egg proteid his tolerance gradually rose until it became 100 grams in twenty-four hours. At this time we again gave him meat proteid, which he was able to tolerate and at the same time hold 100 grams per day of carbohydrate. At no time during the early days of his critical study did he get more than 60 grams of proteid. Later as he grew in tolerance, the ordinary amount of proteid was allowed him. By close

observation his tolerance grew to 300 grams, four months after the studies were begun.

To illustrate further: We cite a case, Mr. W., age seventy, rather obese, who had been troubled for some years with gouty attacks. On account of a sprained ankle he was forced to bed for some weeks. A severe attack developed. Lowering of the proteid and an increase of the carbohydrates produced a polydipsia and polyuria, a polyphagia and a glycosuria. His blood showed a hyperglycemia, a uricemia, and a uremia. By carefully regulating his proteid, purine, and carbohydrate diet, the increase of metabolic products in the blood were lowered to normal, his symptoms were relieved. Today, three years after the treatment was begun, he still remains a well man. Occasionally during these years he has presented himself for study. A nurse is in constant attendance to control the amount and ratio of food which Mr. W. metabolizes. By such close and careful observation the years of this man's life are prolonged on a diet and a mode of life which fits his metabolic power.

Every metabolic case that presents itself is boiling over with questions. No two alike. They need close observation, chemical investigation, as well as an investigation of the physical and psychical conditions. Last but not least a measured dietary. A dietary commensurate with the patient's power to metabolize. In place of the old-fashioned single test of tolerance, a complicated, detailed, procedure has arisen, which takes into consideration the great variations one meets with in patients. Let us keep in mind, however, that empiricism still sways us, and that our main guide is still clinical experience.

Patients who present themselves for study are kept for three or four days on their usual diet, and careful quantitative examinations of the urine, feces, and blood are made. In the urine we note the quantity of urea, total nitrogen, uric acid, sugar, acetone, and diacetic acid, also albumin as well as the acidity of the urine and the total quantity. In the blood we get the extent of hyperglycemia, also the uric acid, urea, and total non-proteid, nitrogen content of the blood. The patient's stool is examined, the total fat estimated, and a nitrogen balance taken.

From these laboratory data our conclusions to the proper treatment are drawn. It is here that the clinical experience is of the utmost value. Not only must the proper kind of food be chosen, but the ratio of the foods is of importance. The determination of the proper ratios is estimated by the laboratory as the treatment proceeds. Daily quantitative estimations of the urines are made. Once or twice weekly, estimations of the feces are made. The food is accurately weighed for each meal, and the total proteid, fat, carbohydrate, and calories for each meals determined, as well as the totals for the day. Great care is taken to select a diet of such a character that no great changes, as to the amount of proteid, fat,

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

carbohydrate and calories are needed. We find that patients do much better in whose diets there are no great and sudden changes of any kind of food, and are so arranged that say, for example, the protocol for a day was proteid 77 grams, fat 161 grams, carbohydrate 84 grams, calories 2202 grams. The next day we would keep the same ration as nearly as possible. If, however, the analytical results for the next day or two show abnormalities, the ratio is changed to again restore the excreta to their normal values.

Of course the greatest problem in the treatment of these cases is the carbohydrate intake. This, properly controlled, relieves the glycosuria, then the hyperglycemia, which limits the polyuria, and the polydypsia. Thus one of our first aims is to prevent the leaching of the body cells. The great polydypsia, on the one side and the polyuria on the other, make the body a percolator. This constant percolation cannot but have its effect upon the metabolism as a whole.

In order to reach some definite idea as to how much carbohydrate to feed our patients a tolerance test is made in the usual way. From this we have a standard to begin our carbohydrate feeding. We usually remain from 5 to 10 grams below the actual tolerance, because no diabetic patient shows a constant level for his tolerance. By so doing we avoid the slight hyperglycemia and glycosurias, which are so detrimental to progression in carbohydrate tolerance. Having a carbohydrate value, we begin to adjust our proteids and fats, being led in their adjustment by the urea, total nitrogen balance, ammonia, acidity, and the amount of acetone bodies in the urine. It is a well-known fact that no class of food is assimilated alone. They are assimilated together. If this ratio of assimilation is disturbed the results will be shown in the laboratory analysis. This ratio of assimilation is, however, not constant and may be greatly changed in any individual, and is constantly changing in diabetes. To illustrate: A case is on a certain protocol and the urine free from all pathological products. Gradually there develops a slight ketonuria, say, .040-0.50 to 170 mg. This is the great indicator for a change in the ratio of the foods. Usually a simple elevation of the carbohydrate intake will relieve the ketonuria, which, however, appears again in a few days or a week. This, again calling for more carbohydrate. A persistent ketonuria, which is not relieved by increase of carbohydrate even to the point of glycosuria means too high fat ratio, which, if properly lowered, will relieve the ketonuria and the process of increasing the carbohydrate tolerance may proceed.

Indican, high urea, nitrogen balance usually means too high proteid ratio. Reduction of which usually clears up the condition.

It might be mentioned here that it is for these conditions that bulgari bacilli has given us aid. Not, however, in the diabetic process at all. Our cases treated purely dietetically do just as well

as those treated with the addition of the bulgari bacillus. Nor have we found that any drug or organo-therapy has given us any aid.

The total caloric intake for the day is of great importance. We regulate this in the following way: When a patient comes for study, he or she is weighed. We start them on a total caloric value of 35 to 40 grams per K., as a rule. This we soon change if our patient is losing weight or excreting sugar. Our object is to find such a caloric value that will keep our patient at a constant or slightly increasing weight, and at the same time keep the waste metabolic products in the urine in their normal proportion.

We can never estimate the best caloric value for our patient in less than two or three weeks. It must be kept within the patient's metabolic powers, yet close up to his limit. To overstep his metabolic powers is disastrous, and may easily undo a month's or six weeks' work. One of our guiding principles here as well as in other diseases is the principle of rest. We try to keep our patients just in a physiologic metabolic state. That is, a metabolic state such as to keep our patient in a state of wellbeing, but no excesses. To keep his metabolic mechanism working at its minimum capacity compatible with normal physiologic states.

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## Notes from the State Department of Health

### THE COUNTY TUBERCULOSIS HOSPITAL IN NEW YORK STATE.

The last few years may well be regarded as the beginning of a constructive period in the tuberculosis campaign. Out of the discussions, experiments and educational work of the years which preceded, the value of one method of combating the disease became fully established, namely, the segregation of those afflicted with the disease,—and following this, the means of making this possible, that is, the institution. Study and experience proved that the most practicable governmental unit for the establishing and maintenance of the tuberculosis hospital was the city or county. In pursuance of this idea, a systematic effort has been made in New York State to bring about the founding of a local tuberculosis hospital in each county and large city.

We have, therefore, in New York State today twelve county tuberculosis hospitals established under the special County Tuberculosis Hospital Law, one in process of construction soon to be opened, and all of them either needing or actually planning and erecting additional buildings. Several cities, notably New York, Buffalo, Auburn, Poughkeepsie and Yonkers, have special tuberculosis hospital facilities aside from any provided by counties. The newness of these institutions and the rapid development in hospital construction has necessarily resulted in some instances in defects in design, organization or management.

During the last year the State Department of Health undertook a systematic survey of all the county tuberculosis hospitals to determine their general status, and wherein their usefulness might be improved, and to particularly extend to them the resources and assistance of the State's service. This work was undertaken as the outcome of an annual inspection required by



State Law. As a result many suggestions were offered, most of which have been carried into effect, and a cordial spirit of co-operation has been established between the Department and the hospital authorities.

A remarkable feature of the institutions generally is their very rapid growth. Many of the county tuberculosis hospitals were extremely small when opened, and within one or two years afterwards they either increased their bed capacity or planned numerous extensions to meet urgent needs. Plans for new buildings and improvements must be submitted to the State Health Department for approval. Many such plans for new structures and additions have been submitted, and by co-operation with architects and boards of managers there are now being erected or planned in several counties, pavilions, and other buildings, of the most modern type.

To facilitate this work, the Department is preparing plans for model small tuberculosis hospitals, to be made available for use by any architect or board of trustees having such work under consideration. It is hoped that this will facilitate the work of both the hospitals and the State Department, and will also result in the counties of this State having institutions of the best modern design.

There has also been organized an association of local tuberculosis hospital superintendents and managers, which has established committees for the conduct of its work. Among these are committees on efficiency and standardization of forms and records which, in co-operation with the State Health Department, are now preparing their reports.

OTTO R. EICHEL, M.D.,  
*Director, Division of Sanitary Supervisors.*

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## Correspondence

DOCTOR JOHN COWELL MACEVITT,

*Editor, New York State Journal of Medicine.*

There was started in 1898 by the New York State Medical Association a movement to clean up the advertising pages of the medical journals and medical directories of the United States.

In that work the earnest and active co-operation of Doctor George H. Simmons, Secretary of the American Medical Association and Editor of its *Journal*, was most helpful, and through his efforts the co-operation of the Board of Trustees of the American Medical Association was secured.

While the stand originally taken by the New York State Medical Association is being more and more generally adopted by the medical profession of the United States it has been but slightly helped by the various medical journals published in New York.

It is thought that it might be both timely and proper to emphasize parts of the very forceful editorial from the pen of the editor of the *NEW YORK STATE JOURNAL* of October, 1915, entitled, "What is the Character of the Medical Journal you Read?"

The receipt of money from the advertisers of nostrums whose extravagant claims and misleading statements in connection with therapy is as disreputable as a church missionary supported on an income from vice.

It is refreshing to quote that "Any medical journal printing the fraudulent claims contained in the adver-

tisements of the nostrums condemned by the Council on Pharmacy and Chemistry is an accessory to this act of thievery, and the subscriber to such journals voluntarily assumes the position of an accomplice."

The publishers and editors of medical journals who place rank nostrums before their readers as preparations worthy of acceptance by the medical profession may be properly anathematized in the words of the editorial, "It must furthermore appear patent to every one that financial gain is the one and only aim of these conscienceless individuals who dupe the public, that there is no more philanthropy in their reptilian souls than there is sympathy for any living thing in the brain of the venomous adder."

Medical periodicals that advertise secret remedies and especially those that present in addition thereto "write ups" of the detestable preparations have a tendency to lower the status of medical practice and are factors in lessening the respect for the medical profession as a whole. They should be branded as befoulers of the nest.

After a careful examination of the advertising pages and "write ups" of nostrums in several of the leading medical journals having a large circulation in New York it is noticeable that many of the journals show a decided improvement in presenting a less number of fraudulent pseudo-chemicals as compared with the advertising pages of such journals a decade ago.

There are many other medical journals published in the United States, judging from their advertising pages, that would lead one to believe that their sole support was derived from this filthy lucre and they have no other reason for their existence than the pocketing of such money.

Let the medical profession rise up and denounce such frauds. Let us clean our own house in our own State. Joining with others to do the same work for the United States.

That this letter may not be a criticism of generalities the following is a brief summary of the investigation made of the journals upon the shelf of the New York Academy of Medicine.

The journals examined may be divided into three classes:

*First*—Those devoted to General Medicine and Surgery.

*Second*—Those relating to Medicine.

*Third*—Those relating to Surgery.

The journals of the three classes contained advertisements of no less than thirty-nine vile varieties of nostrums in the issues of the months of September and October, 1915.

Only the rankest nostrums were included in this investigation. One investigator said, "Some of the vilest stuff appeared regularly in the majority of the journals published in this State."

There were four of the journals examined which were free from every objectionable advertisement. It is asked, "If these can do this, why should not all the others?"

Let us make our own medical press clean in its advertising pages before trying to clean up the pages of the public press along similar lines.

My Dear Editor: Your words were words long overdue, I hope other medical editors will follow your lead in the interest of health, honor, and honesty.

143 West 103rd St.  
New York City.

S. DANA HUBBARD.

## Medical Society of the State of New York

### District Branches

#### FIRST DISTRICT BRANCH.

ANNUAL MEETING, NYACK, OCTOBER 9, 1915.

Meeting called to order at 11.30 by the President, Dr. Sadlier. Minutes of the last meeting were read and approved.

The new by-laws were read and Dr. Crandall moved that they be adopted. Unanimously carried.

The Secretary read a letter from the New York State Committee for the Prevention of Blindness.

Moved by Dr. Toms that it be laid on the table.

The President announced that through the adoption of the new by-laws the officers elected last year would hold over another year, also that these by-laws created a new office, that of Second Vice-President, and he requested the Society to elect the new officer.

Moved and seconded that a nominating committee be appointed to suggest a candidate for Second Vice-President. The President appointed Drs. Hardenbergh and Bishop, who reported Dr. S. W. S. Toms as candidate. Dr. Toms asked to be excused, and suggested a member who had not held the office of President.

The committee retired and offered later the name of Dr. J. B. Hulett, Middletown. Moved, seconded and carried that the Secretary cast a ballot for Dr. Hulett for Second Vice-President. The Doctor was declared elected.

The President's address, "The Utilization of the Knowledge We Possess," by James E. Sadlier, M.D., Poughkeepsie.

Address by W. Stanton Gleason, M.D., Newburgh, President Medical Society of the State of New York.

"What Are the Indications for Removal of a Section for Microscopical Diagnosis, Suspected Malignancy?" Samuel E. Getty, M.D., Yonkers.

"Melanotic Sarcoma," J. P. Hogue, M.D., New York.

Discussion by Drs. Parker Syms, W. R. Townsend, G. A. Leitner, L. Mayer, J. E. Sadlier.

After a very appetizing lunch at the Hotel St. George the scientific session was resumed.

"The Importance of Early Recognition of Arterio-Sclerosis," Louis F. Bishop, M.D., New York.

"Renal Haematuria: Its Clinical Significance," Edward C. Thompson, M.D., Newburgh.

"Practical Deductions to Be Derived from Examination of the Blood," Howard P. Carpenter, M.D., Poughkeepsie.

"Traumatic Hysteria-Trauma Cause or Occasion," Daniel B. Hardenbergh, M.D., Middletown.

"Report Upon a Case of Surgery of the Liver," George A. Leitner, M.D., Piermont.

Discussion by W. H. Howell, M.D.

This ninth meeting of the Branch was excellently attended, the weather was exceedingly fine, and there were in attendance over seventy-five members. The papers were excellent in quality, and there was an intense interest throughout the session. It was one of the best meetings ever held by the First District Branch.

#### SECOND DISTRICT BRANCH.

ANNUAL MEETING, BROOKLYN,

November 22, 1915, at 8.30 P. M.

##### SCIENTIFIC PROGRAM.

1. Address: "The Relation of the Physician to His Brother Practitioners, and to the Profession," William S. Gottheil, M.D., New York, Editor-in-Chief of the *Medical Economist*.

2. Address: "The Duty of the Physician to the Community," William S. Wadsworth, M.D., Philadelphia.

3. President's Address: "The County Society, Its Privileges, Duties and Obligations."

A discussion will follow each address.

#### FOURTH DISTRICT BRANCH.

ANNUAL MEETING, SARANAC LAKE, N. Y.

Tuesday, October 12, 1915.

The meeting was called to order at 11 A. M. by the President, Dr. J. B. Ransom, Dannemora. Sixty physicians were present. The Secretary being absent, Dr. G. M. Abbott, of Saranac Lake, was elected Secretary pro tem. The following papers were read:

"Appendicitis as a Complication of Pulmonary Tuberculosis," Hugh M. Kinghorn, M.D., Saranac Lake.

Discussion by Robert M. Brown, M.D., Saranac Lake, and Robert C. Paterson, M.D.

"Report of Cases of Appendicitis," Lew H. Finch, M.D., Amsterdam.

"Cancer as a Public Health Problem," Howard C. Taylor, M.D., New York.

"The Significance of Pyloric Spasm," Irving S. Haynes, M.D., New York.

"Renal Calculi," Robert S. Macdonald, M.D., Plattsburg.

"Reduction of Obesity," Albert W. Ferris, M.D., Saratoga Springs.

The meeting adjourned at 1 P. M. to the Berkeley Grill for lunch.

##### BUSINESS SESSION.

By vote the minutes of the last meeting were accepted as recorded, without being read.

The new by-laws, proposed at the last Annual Meeting held at Gloversville, October 13, 1914, were unanimously adopted. Thomas A. Rogers, M.D., of Plattsburg, was elected Second Vice-President.

W. Stanton Gleason, M.D., of Newburgh, President of the Medical Society of the State of New York and Wisner R. Townsend, M. D., New York, Secretary of the Medical Society of the State of New York, addressed the meeting at considerable length.

"End Results in Cases Operated for Salpingitis," Edwin MacD. Stanton, M.D., Schenectady.

"Artificial Pneumothorax," with demonstration of cases, J. Woods Price, M.D., Saranac Lake.

Presentation and Report of Case of Dermoid Cyst, Lawrason Brown, M.D., Saranac Lake.

Linsly R. Williams, M.D., Deputy State Commissioner of Health, being absent, his paper on "Milk and Communicable Diseases" was read by title only.

At 4 o'clock the meeting adjourned to the Ray Brook State Hospital, where Albert H. Garvin, M.D., gave demonstrations of the "Bronchiectatic State."

#### SIXTH DISTRICT BRANCH.

ANNUAL MEETING, ELMIRA, N. Y.

October 5, 1915.

The meeting was held with the Elmira Academy of Medicine at the Federation Building and was called to order at 11 A. M., the President, Dr. Manley, in the chair. There were eighty present.

First order of business was the consideration of the new by-laws presented at the last meeting.

Chapter I. was adopted as proposed.

Chapter II. was adopted as proposed, except that Section 1 was changed so as to permit the election of two Vice-Presidents, with corresponding change in the wording of the section. Section 5 was changed so as to read Vice-Presidents instead of Vice-President, and in the fourth line of this section the words "in numerical order" were inserted following the word "Vice-Presidents." Section 7 was amended by striking out the concluding words "two members of the Executive Committee" and inserting in their place "the President and Secretary." A new section, called Sec-

tion 9, was added to this chapter, reading "Five members shall constitute a quorum."

Chapter III. was adopted as printed, except that the number of members to constitute a quorum was placed at fifteen, and in the next to the last line of the first section the word "shall" was changed to "to."

Chapters IV., V. and VI. were adopted without amendment.

On motion duly seconded and carried, the by-laws were adopted as revised.

As the minutes of the previous meeting had been printed, further reading was omitted.

It was moved, seconded and carried that the next Annual Meeting be held at Cortland the first Tuesday in October, 1916.

On motion duly seconded and carried, the President appointed a committee of three to nominate candidates for office for the ensuing two years. The President named as such committee Drs. Moore, Cady and Jennings, which committee presented the following:

For President, Arthur W. Booth, Elmira; First Vice-President, R. Paul Higgins, Cortland; Second Vice-President, Leon M. Kysor, Hornell; Secretary, Charles H. Gallagher, Ithaca Treasurer, Stuart B. Blakely, Binghamton.

On motion duly seconded and carried, the Secretary cast the vote of the Society for the officers named, and they were declared duly elected.

The paper of M. M. Lucid, M.D., on "Peritonitis from the Standpoint of the General Surgeon," in his absence, was read by A. W. Booth, M.D.

Discussion by Ross G. Loop, M.D., Charles G. R. Jennings, M.D., Arthur W. Booth, M.D.

The Society then adjourned for luncheon, which was served on the lower floor of the Federation Building.

The meeting reconvened at 1.30 P. M., Dr. Manley, President, in the chair.

Dr. Arthur W. Booth, of Elmira, the newly-elected President, presented an address entitled "The Medical Expert." In view of the dignity of our profession, the virtues of our honored profession are reduced by some men of the profession posing as medical experts. The purpose of medical testimony is to secure an interpretation of technical testimony and evidence so as to make it intelligible to the lay mind. Lack of qualification of the witness, difficulty of complete explanation by a witness, limited opportunity for preliminary examinations are all factors preventing a fair presentation of the medical aspects of the case. Medical experts should be appointed by Supreme Court justices after special training, and from this list of properly qualified experts each litigant could select two witnesses and together they select a fifth witness and these witnesses should report to the court much the same as a jury. Provision should also be made for the presentation of a minority report.

Discussion by N. H. Soble, M.D., Elmira; Howard B. Besemer, M.D., Ithaca; Benjamin W. Stearns, M.D., Unadilla; Palmer H. Lyon, M.D., Watkins.

Dr. Stearns moved that we have a rising vote of assent to the paper, and that its publication be requested. The motion was seconded and carried by a unanimous standing vote.

Dr. John C. A. Gerster, of New York City, presented a paper on "Prophylactic, Radical, Palliative Treatment of Cancer." There is a great uncertainty of the clinical diagnosis. Unduly prolonged palpitation of a tumor is apt to milk the cancer cells into the adjacent lymphatics. Wide excision and excessive removal of lymphatics is the only proper method of treatment. Sarcomata of long bones, if incapsulated, resection is proper treatment. The application of radium precedent to panhysterectomy sometimes has proven of assistance. Radical treatment of the tumor by radium or X-ray is not so satisfactory as surgical methods, as the former methods are most apt to be followed by recurrence. Radium and X-ray have made great advances in the palliative treatment of cancer. The radium should be

in contact with the actual tumor cells as in a distance of 1 or 2 cm. from the radium we get very little effect of the radium. Coolidges tubes are very well suited to deep-seated growths. The Percy method of cooking the tumor in carcinoma of the uterus is sometimes used with success.

Dr. Stuart B. Blakely, of Binghamton, presented a paper on "The Medical Aspect of Cancer." Frequent physical examinations are the only sure means of diagnosis, we must not depend on mere symptomatology. The public must be instructed and educated to the early diagnosis of cancer. Medical societies and the medical profession are organized for the study and control of cancer. The death rate from cancer is steadily increasing. Cancer seems to be a disease of civilization. Cancer seems not to be directly contagious. The cause of cancer has not yet been determined. Chronic irritation and frequent traumatism are certainly predisposing factors. Prevention and early diagnosis are the best things we can do for our patients. Surgery is the only proper treatment of cancer. Any chronic inflammation or irritation must be remedied. A great percentage of cancers are inoperable when they reach the surgeon and steps should be taken to get more early cases when they are able to be cured. Early wide excision is the only proper treatment.

The papers on cancer were discussed by:

Wisner R. Townsend, M.D., New York; Arthur W. Booth, M.D., Elmira; Benjamin W. Stearns, M.D., Unadilla; N. H. Soble, M.D., Elmira; John C. A. Gerster, M.D., New York; Stuart B. Blakely, M.D., Binghamton.

Dr. Paul B. Brooks, of Norwich, presented a paper on "The Responsibility of the Medical Profession in the Control of Venereal Diseases." He advocated the banishment of the public prostitute. The reporting of venereal diseases is a necessary step in the stamping out of this blot on civilization. The responsibility for the suppression of venereal diseases rest heavily on the medical profession. The police officials and authorities must be educated and must be convinced that their tenure of office depends upon the opinion and convictions of honest people. The first victim of venereal disease unfortunately is not the only person who is often most concerned and often it is the most innocent who must bear the most suffering.

Discussion by John C. A. Gerster, M.D., New York; N. H. Soble, M.D., Elmira; George Van R. Merrill, M.D., Elmira; Paul B. Brooks, M.D., Norwich.

Dr. Townsend moved that a rising vote of thanks be given for the hospitality of the Elmira Academy of Medicine and to the physicians of Elmira and the vicinity, who had done so much to make the meeting a success, notwithstanding the inclement weather. The motion was seconded and unanimously adopted.

The Society then adjourned for a short recess.

The meeting reconvened at 4:30 P. M.

Dr. M. B. Tinker, of Ithaca, presented a paper on "The Diagnosis of Götter."

Discussion by Silas D. Molyneux, M.D., Sayre, Pa.; Ross J. Loop, M.D., Elmira; Clarence W. Lieb, M.D., Watkins; John C. Fisher, M.D., Elmira; George N. Pease, M.D., Portland, Oregon.

## SEVENTH DISTRICT BRANCH.

ANNUAL MEETING, GENEVA, N. Y.

Thursday, September 23, 1915.

The meeting was called to order with the President, Dr. Shanahan in the chair.

W. Stanton Gleason, President, Medical Society of the State of New York read the first paper, and his remarks were for the betterment of the profession in general. He said that he wished that every member of this District Branch might attend these meetings and take cognizance of what is said, because of the broadening influence it has.

The following papers were then read:

"A Plea for the Feeble-minded," by Ethan A. Nevin, M.D., Newark.

Discussion by A. A. Young, M.D., W. M. Brown, M.D., Eliza M. Mosher, M.D., and W. B. Chase, M.D., closed by Dr. Nevin.

"Eclampsia and Its Treatment," by W. Mortimer Brown, M.D., Rochester.

"Surgical Asepsis," Frederick H. Flaherty, M.D., Syracuse. Discussed by Wisner R. Townsend, M.D., New York.

"Gall Bladder Disease," by Homer J. Knickerbocker, M.D., Geneva.

"The Advantages of Ether Anesthesia and the Sitting Posture in Tonsillectomy," by Alfred W. Armstrong, M.D., Canandaigua.

The president announced that the last three papers would be discussed after the business meeting.

The meeting then adjourned for luncheon.

#### BUSINESS SESSION.

Moved, seconded and carried that the reading of the minutes be suspended.

Dr. W. Mortimer Brown extended an invitation to hold the next meeting in Rochester.

On motion duly seconded and carried, the invitation was accepted.

The following nominations were made for officers for the ensuing year:—W. Mortimer Brown, of Rochester, for President; Frederick R. Driesbach, of Dansville, for 1st Vice-President; Charles E. Doubleday, of Penn Yan, for 2nd Vice-President; Alfred W. Armstrong, of Canandaigua, for Treasurer, and John F. Myers, of Sodus, for Secretary.

On motion duly seconded and carried, the Secretary cast the ballot for Drs. Brown, Driesbach, Doubleday, Armstrong and Myers, and they were declared duly elected.

On motion duly seconded and carried, a standing vote of thanks was rendered Dr. Homer J. Knickerbocker for the fine luncheon and entertainment provided by him.

After distributing copies of the by-laws presented at the previous meeting for consideration at this time, the different sections were read and acted on separately.

On motion duly seconded and carried, the by-laws were adopted as a whole.

#### SCIENTIFIC PROGRAM.

The last three papers read before luncheon were discussed by Drs. Broad, Lawrie and Townsend. The latter spoke on Asepsis of Wounds.

"Pellagra," with presentation of case, by G. Kirby Collier, M.D., Sonyea. Discussed by John R. Williams, M.D., Rochester.

"Intestinal Stasis, Its Causes, Prevention and Treatment," by Eliza M. Mosher, M.D., Brooklyn.

A. A. Youngs, of Newark, asked what results could be had from the Auscultation of the Bowels to which Dr. Mosher replied, "the colon could be mapped out."

"Present Status of the Cancer Problem," by Henry R. Gaylord, M.D., of Buffalo.

Dr. William J. Dean being unable to be present, his paper was read by title.

"Mouth Infection," illustrated with lantern slides, by Arthur W. Smith, D.D.S., Rochester.

"The Relation of Mouth Infection to Systemic Diseases," by John R. Williams, M.D., Rochester.

"The Health Department and the General Practitioner of Medicine," by Isaac W. Brown, M.D., of Geneva.

"Visical Calculus," by Edwin C. Foster, M.D., Penn Yan.

#### EIGHTH DISTRICT BRANCH.

ANNUAL MEETING AT OLEAN,

September 21 and 22, 1915.

Tuesday, September 21st

Meeting called to order by the President, Dr. Carl G. Leo-Wolf, at 2.35 P. M.

The scientific session only was held Tuesday afternoon, and the following papers were presented:

"Two Cases of Intestinal Occlusion Following Parturition," by Dr. Jane L. Greeley, Jamestown.

"Accidents and Injuries of the Eyes. Their Prevention and Treatment," F. Park Lewis, M.D., F.A.C.S., Buffalo.

"Backache, and Anatomical Explanation, with Diagnosis and Treatment," Roland O. Meisenbach, M.D., Buffalo.

Dr. Meisenbach presented an Orthopedic Exhibit of Bones and Joint Conditions commonly seen by the General Practitioner. The Exhibit was shown at the Public Library after adjournment of the regular session.

At 8 P. M. the Medical Society of the County of Cattaraugus gave a supper at the Olean House to all the members present at the meeting.

Wednesday, September 22.

#### BUSINESS SESSION.

Meeting called to order at 10.15 A. M. On motion, the minutes of the last meeting were adopted as published in the JOURNAL of the Medical Society of New York.

The new by-laws which were presented at the meeting held at Niagara Falls, September 23, 1914, were adopted as published, with the exception of some minor changes.

The following officers were elected to serve for two years, as provided by the new by-laws adopted at this meeting:

President, A. T. Lytle, Buffalo; First Vice-President, Edward Torrey, Olean; Second Vice-President, W. Ross Thomson, Warsaw; Secretary, L. C. Lewis, Belmont; Treasurer, F. H. Van Orsdale, Belmont.

A motion was made and carried that the President appoint a committee to act on the recommendations made by Dr. F. Park Lewis regarding the use of school books for the propaganda of conservation of vision in school children.

Following the business session the scientific session was continued and the following papers were presented:

#### SCIENTIFIC SESSION.

President's Address, by Carl G. Leo-Wolf, M.D., Buffalo.

"Cancer," Joseph C. Bloodgood, M.D., Baltimore.

"The Dietetic and Medical Treatment of Cancer," L. Duncan Bulkley, M.D., New York City.

"Work of the State Institute for Cancer Research," Harvey R. Gaylord, M.D., Buffalo.

"Syphilis of the Stomach, with a Report of an Unusual Case," Raymond B. Morris, M.D., Olean.

"Report of a Case of Primary Melanotic Sarcoma of the Lungs, Presenting Difficulties in Differentiating from Tuberculosis," Oscar F. Kunkel, M.D., Bell's Camp, Pa., and Edward Torrey, M.D., Olean.

"Neglected Surgery," illustrated with lantern slides, W. Ross Thomson, M.D., Warsaw.

Lantern slide demonstration of bone sections, by R. O. Meisenbach, M.D., Buffalo.

"End Results," William D. Johnson, M.D., Batavia.

"Experience in a French Military Hospital," Ray M. Eaton, M.D., Wellsville.

"Presentation of a Case," J. Henry Dowd, M.D., Buffalo.

## County Societies

### MEDICAL SOCIETY OF THE COUNTY OF ESSEX.

ANNUAL MEETING, PORT HENRY, NEW YORK,  
OCTOBER 5, 1915.

Meeting called to order at 2:10 P. M. by the President, Dr. C. B. Warner. Roll Call showed the following members present: Drs. L. G. Barton, Jr., T. H. Canning, J. P. J. Cummins, T. J. Dowd, E. R. Eaton, N. H. Liberty, C. R. Payne, R. T. Saville, W. T. Sherman, M. H. Turner and C. B. Warner. In addition to the members, Drs. Frederick W. Bancroft, of New York City, and Morgan B. Hodskins, of Palmer, Mass., were present.

Minutes of the last meeting were read and approved as read.

The President appointed as nominating committee for officers for 1916, Drs. Saville, Eaton and Liberty, who reported the following nominations:

For President, Melvin H. Turner, Ticonderoga; Vice-President, Thomas H. Canning, Port Henry; Secretary, Charles R. Payne, Wadhams; Treasurer, William T. Sherman, Crown Point. Censors: Lyman G. Barton, Jr., Robert T. Saville, John H. Evans.

The Secretary was instructed to cast one ballot, electing these officers for 1916, and on motion duly seconded and carried, they were declared elected.

The Committee on Resolutions, Drs. Evans and Noble, reported the following resolutions, which were unanimously adopted:

Whereas, By the death of Dr. Harry K. Blodgett, late of Lake Placid, the Medical Society of the County of Essex has lost a valued and promising member of the medical profession and a man of true worth and high ideals, be it

*Resolved*, That the members of the Medical Society of the County of Essex regret and deplore the untimely death of said Dr. Harry K. Blodgett and that a copy of these resolutions be inscribed upon the minutes of the Society.

J. H. EVANS and F. M. NOBLE,  
*Committee.*

Whereas, Dr. H. W. Rand, of Keene Centre, has passed away, after a long and honored life of self-sacrifice and devotion to the interests of his fellow men, leaving regret and loving memories among all who knew him during his many years of medical practice, and

Whereas, In his demise, the medical profession at large and we of the Medical Society of the County of Essex in particular, have lost a valued and honored member, be it

*Resolved*, That the Medical Society of the County of Essex adopt these formal resolutions of regret at the death of Dr. H. W. Rand, and that a copy of these resolutions be inscribed in the minutes of the said Society and published in the County papers.

J. H. EVANS and F. M. NOBLE,  
*Committee.*

The Treasurer's report was read and accepted.

#### SCIENTIFIC PROGRAM.

"Bumptious Consulting M.D."

Charles B. Warner, M.D., Port Henry.

"Cancer,"

Frederick W. Bancroft, M.D., New York.

Dr. L. C. Barton, Jr., gave a most interesting description of his experiences as a member of the American Ambulance Hospital in Paris during the war and exhibited many photographs, showing scenes, patients and methods of treatment.

A vote of thanks was tendered to Drs. Bancroft and Barton for their papers.

### MEDICAL SOCIETY OF THE COUNTY OF LIVINGSTON.

ANNUAL MEETING, DANVILLE, N. Y., OCTOBER 6, 1915.

The meeting was held, as required by the Constitution and By-Laws of the Society, at the County-seat, Geneseo, on October 5th. An adjournment was taken to meet at the Jackson Health Resort, at Dansville, on the following day, October 6th.

On motion duly seconded and carried, the following officers were elected for the coming year: President, Hubert B. Marvin, Lima; Vice-President, William N. Trader, Sonyea; Secretary-Treasurer, G. Kirby Collier, Sonyea; Delegate to State Society, Fred R. Driesbach; Censors: John P. Brown, Frederick J. Bowen, Walter E. Lauderdale, Fred R. Driesbach, and Frederick A. Wicker.

Amendments to the Constitution and By-Laws, introduced at the last annual meeting, were read and adopted as read.

#### SCIENTIFIC PROGRAM.

X-Ray Diagnosis, Dr. A. W. Holmes, Dansville.

Reports of cases by Dr. F. J. Bowen, Mt. Morris; Dr. F. V. Foster, Caledonia, and Dr. H. V. Marvin, Lima.

Members of the Society were the guests of the Jackson Health Resort, which entertained the Society at luncheon. Guests were present from the Wyoming and Monroe County Societies.

### MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON.

ANNUAL MEETING, AT HUDSON FALLS, OCTOBER 5, 1915

Meeting called at 11 A. M. Minutes read and approved.

*Resolved*, that a committee of the whole be formed for the nomination of officers. The following were nominated and on motion duly seconded and carried were declared elected. For President, Robert A. Heenan; Vice-President, William L. Munson; Secretary, Silas J. Banker; Treasurer, Russell C. Paris; Delegate to State Society, John Millington; Alternate to State Society, Robert A. Heenan. Censors: James T. Park, Chairman; George M. Stillman, Clifford W. Sumner.

Dr. Elmer E. Mosher was elected to membership.

President appointed as members to the Committee on Legislation, W. B. Melick, Chairman; R. H. Lee, R. C. Davies.

The Treasurer reported a balance of \$66.14.

Committee on death of Dr. Henry Gray, reported the following, which, on motion duly seconded, was adopted:

Whereas, the death of Dr. Henry Gray removes from the ranks of our Society a highly esteemed member, and one who for years has upheld the honor and dignity of the medical profession in our county, and

Whereas, his many years of skillful and conscientious work as a physician, his devoted and distinguished service to his country in the crisis of fifty years ago, and his life-long adherence to the highest ideals of citizenship and the cherished principles of our profession earned him a high place in professional circles and one high in the esteem of the community in which he lived. Therefore, be it

*Resolved*. That our Society in recording his death express its deep regret and its sincere appreciation of his worth and the value of his work. A man of strong character, refinement and high intelligence, his participation in any undertaking was a source of strength, and his admirable personal qualities endeared him to all who knew him.

*Resolved*, That a copy of these resolutions be spread upon the minutes of the Society and a copy sent to the family of our deceased member.

JOHN MILLINGTON, OLIN J. FRYER, L. R. OATMAN,  
*Committee.*

It was decided that the next meeting be held in Granville.

SCIENTIFIC PROGRAM.

"The Treatment of Erysipelas with Phylacogen, three cases," Royal E. La Grange.

President's Address—"The Use of Narcotics in Labor, the So-called 'Twilight Sleep,' Management of Confinement Cases."

Discussion by Silas J. Banker, M.D., Fort Edward; William B. Melick, M.D., Fort Edward; Lewis R. Oatman, M.D., Greenwich; Clifford W. Sumner, M.D., North Granville.

"A Few of the General Factors in Etiology of Gastric Disturbances and Some of the Principles of dietetics in the Treatment of the same," William B. Melick, M.D., Fort Edward.

"Vaccines and Immunity," Morris Maslon, M.D., Glens Falls.

Discussion by James F. Rooney, M.D., Albany.

"Functions of the County Society Relating to Public Health Legislation," James F. Rooney, M.D., Albany.

At the suggestion of Dr. Rooney, the following resolution was presented and adopted:

*Resolved*, That this, the Medical Society of the County of Washington, does hereby request its Senator and Representative to favor an enactment, making the physician's claim for services rendered a deceased person or his or her family a preferred claim against the estate of said deceased.

A vote of thanks was tendered Drs. Rooney and Maslon.

ONTARIO COUNTY MEDICAL SOCIETY.

The annual meeting of the Ontario County Medical Society was held at Canandaigua, October 19, 1915. The following officers were elected for the ensuing year: B. T. McDowell, Bristol Center, President; C. W. Selover, Stanley, Vice-President; D. A. Eiseline, Shortsville, Secretary and Treasurer.

SCIENTIFIC SESSION.

"Cancer Prophylaxis," Donald Guthrie, M.D., Sayre, Pa.

"Fracture of the Skull, with Report of a Case," Charles W. Webb, M.D., Ithaca.

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 PRACTITIONER'S ENCYCLOPEDIA OF MEDICAL TREATMENT. Part I. Methods of Treatment. Part II. Agents in Treatment. Edited by W. LANGDON BROWN, M.D., F.R.C.P., Assistant Physician St. Bartholomew's Hospital, and J. KEOUGH MURPHY, M.C., F.R.C.S., Surgeon Miller General Hospital, Southeast London, with an introduction by Sir THOMAS CLIFFORD ALLBUTT, K.C.B., F.R.S., London. Henry Frowde, Hodder & Stoughton. Oxford University Press, Warwick Sq., E. C., and 35 West 32d St., New York City. Price, \$8.00, 1915.

INFANT HEALTH. A Manual for District Visitors, Nurses and Mothers. By J. (SHAWNET) CAMERON MACMILLAN, C.M.B., A.R., San. I., Inspector of Midwives and Health Visitor, Aberdeen. London, Henry Frowde, Hodder & Stoughton, Oxford University Press, Warwick Sq., E. C., and 35 West 32d St., New York City, 1915. Price 75 cents.

SYPHILIS AS A MODERN PROBLEM. By WILLIAM ALLEN PUSEY, M.D., Professor Dermatology University of Illinois, Chicago, American Medical Association, 1915.

SENESCENCE AND REJUVENESCENCE. By CHARLES MANNING CHILD, Department of Zoology, University of Chicago. The University Chicago Press, Chicago, Ill. Price \$4.00 net.

HOW TO LIVE. By IRVING FISHER, Ph.D., Chairman, Hygiene Reference Board of the Life Extension Institute, Inc.; Professor of Political Economy, Yale University. 12 mo, cloth, 345 pages, indexed, illustrated, Price, \$1.00 net; by mail, \$1.12. Funk & Wagnalls Company, Publishers, New York.

THE HEALTH-CARE OF THE GROWING CHILD. By LOUIS FISCHER, M.D., Author of "Health-Care of the Baby," etc. Attending Physician in Charge, Babies' Ward, Sydenham Hosp., and Willard Parker and Riverside Hosps.; Former Instructor Children's Diseases, N. Y. Post-Graduate Hosp., etc. 12mo, cloth, 354 pages, indexed, illustrated. Price, \$1.25 net; by mail, \$1.37. Funk & Wagnalls Company, Publishers, New York.

Book Reviews

THE RESPIRATORY FUNCTION OF THE BLOOD. By JOSEPH BANCROFT, M.A., B.Sc., F.R.S., Fellow of King's College, Cambridge. Cambridge, at the University Press, 1914.

Bancroft presents an elaborate monograph, dealing in very readable style, with the complex problems having to do with the chemistry and interactions of hæmoglobin. The experimental evidence is recorded at length and discussed in a complete and convincing manner. Part I. deals with the chemistry of hæmoglobin, particularly in its relation to oxygen and the effect of various factors upon the affinity of hæmoglobin for oxygen. The Second Part of the book is devoted to a consideration of the passage of oxygen to and from the blood, while the Third Part takes up a study of the dissociation curve as an indicator of the reaction of the blood. This includes a study of the effect of such factors as diet, exercise, altitude, etc., upon the dissociation curve, and ends with a clinical study of certain features which have a very practical bearing upon our conception of certain pathological conditions. It is shown, for instance, that uræmia presents certain features that can only be explained by a change in the reaction of the blood in the acid direction. Neither lactic acid nor CO can be held responsible for this change. Another practical conclusion resulted from a study of a certain type of dyspnoea described by Thomas Lewis, in which cyanosis and other evidence of asphyxiation such as would result from mechanical defects in the circulation, were lacking, even though the condition occurred in supposedly cardiac cases. Here, too, an acidosis, "in the sense of an increase of the ratio of acid to basic radicles," was found to be responsible for the condition. This the author attributes to renal insufficiency rather than to metabolic disturbances.

Bancroft gives full credit to his co-workers, who necessarily contributed much to such an extensive investigation, as well as to other workers whose studies bore directly upon the subject in hand.

T. H.

THE CANCER PROBLEM. By WILLIAM SEAMAN BAINBRIDGE, A.M., Sc.D., M.D., Professor Surgery, N. Y. Polyclinic Medical School and Hospital; Secretary Committee Scientific Research, N. Y. Skin and Cancer Hospital, New York. The Macmillan Co., 1914.

Every practitioner of medicine is vitally interested in the subject of cancer. Not to the office of the specialist or of the surgeon does the patient first go, who finds a lump in her breast, observes an unusual discharge, or experiences frequently recurring pains in the rectum, but to her family doctor. He it is, who must be able to recognize cancer in its incipency, if the life of his patient is to be saved or even prolonged. The

great responsibility of making a correct diagnosis, therefore, rests upon him. To meet it, he must be familiar with the disease in whatever tissue it may develop and in all its phases.

Because of this responsibility, there is no doubt but the general practitioner in medicine will gladly welcome the new book by Dr. William Seaman Bainbridge entitled "The Cancer Problem," published by The Macmillan Co. In looking over the book one is impressed, not only by the wide scope of the work, but also by the vast amount of research it represents. Fifty-seven closely printed pages are required for the Bibliography alone.

It is evident that the author has studied the literature of the subject so exhaustively that there can be little of value in any language regarding cancer that he has not brought to the readers of his book. In addition to the literature, he has given the results of his own ripe experience in the treatment of cancer in all its forms and in its various stages. Thus he has brought the subject up to date.

The style in which the book is written adds greatly to its interest, for sad as the story is, because of the multitude of hopeless sufferers it must record, Dr. Bainbridge has written into it his own cheerful optimism.

The New York Skin and Cancer Hospital has long been the "clearing house," so to speak, for vaunted cancer remedies—from the secret nostrums of the charlatans, whose victims go there to die, to the last new cure honestly believed by its discoverer to be the long-sought remedy for the disease. In "The Cancer Problem" one finds the facts regarding these remedies, so that after reading it, no conscientious physician will encourage his patients to believe that a cure can be effected by their use.

Although every chapter in the book is interesting in detail, the busy practitioner will find in the summary at the end of each the most important facts epitomized. These add much to the value of the book.

As to the various theories in regard to the causation of cancer, the author shows conclusively their lack of foundation, and he narrows down the long list of possible causes to local irritation and the presence of benign neoplasms which, subjected to irritation, may become predisposing factors. His statements regarding the non-contagiousness of cancer bring with them comfort not only to the persons affected, but also to their families and to those who take care of cancer patients.

As to the permanent cure of cancer by early and complete surgical removal, Dr. Bainbridge's hopeful attitude is so inspiring it should make the general practitioner keen in bringing promptly even those cases in which the presence of cancer is as yet doubtful to the surgeon for decision and operation.

The advice given by the author regarding the education of the public on the subject of cancer, and the best method to conduct a campaign of teaching is both wise and timely. The book leaves its readers in a hopeful state of mind, both as regards the ultimate success of the world-wide search for the cause of cancer and for its permanent cure when early radically removed by the knife.

E. M. MOSHER.

**DIET IN HEALTH AND DISEASE.** By JULIUS FRIEDENWALD, M.D., Professor Gastro-Enterology; and JOHN RUHRAH, M.D., Professor Diseases Children, College Physicians and Surgeons, Baltimore. Fourth edition, revised and enlarged. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$4.00; half morocco, \$5.50 net.

This sizeable volume contains a large collection of facts about food, and reflects very well the knowledge and ignorance generally held on the subject of dietetics. It contains many interesting dietaries, of institutions, and of the Army and Navy. It also presents a considerable number of recipes for preparing food, and tells how to cut up an ox. At the end of the volume are "rapid reference diet-lists" for a number of diseases, which do not add to its value.

E. E. CORNWALL.

**GENITO-URINARY DISEASES AND SYPHILIS.** By EDGAR G. BALLENGER, M.D., Adjunct Clinical Professor of Genito-Urinary Diseases, Atlanta Medical College, assisted by OMAR F. ELDER, M.D. The Wassermann Reaction, by EDGAR PAULLIN, M.D. Second edition, revised. 527 pages, with 109 illustrations and 5 colored plates. Price, \$5.00 net. E. W. Allen & Co., Atlanta, Ga.

This is a very readable book, published on a poor quality of paper, which mars the otherwise good illustrations. The part dealing with gonorrhoea and its complications is the most valuable. The treatment outlined is generally definite and detailed, which makes the book useful to beginners.

The use of the ice bag is recommended in the treatment of chordee and epididymitis with no warnings of the decided dangers of this practice. To one who has seen gangrene of the penile urethra, with two fistulae resulting from the prolonged use of this measure, this seems an oversight in a book intended for others than the specialist.

In the discussion of the cure of chronic urethritis no mention is made of the destruction, through the endoscope, of infected crypts and glands by means of the cautery or electrolysis. In a small percentage of cases this is the only method of cure.

The original method of aborting gonorrhoea by sealing in the urethra twenty-five drops of argyrol solution is worthy of trial when the author states that he has cured, in a week, seven hundred cases in the past five years.

The discussion of surgical procedures is well written, and that portion dealing with syphilis is valuable to the general practitioner. The information concerning recent therapy is as complete as is possible in a book written on the experience of three years ago could be.

J. STURDIVANT READ.

**THE PHARMACY HANDBOOK.** By F. W. CROSSLEY-HOLLAND, F.C.S., Pharmacist, Member of the Pharmaceutical Society of Great Britain and America, Associate Editor of *The Prescriber*. Oxford University Press, New York City. Henry Frowde, Hodder and Stoughton, London, 1914. Price, \$2.00.

This book of 224 pages is full, cover to cover, of valuable information for both physicians and pharmacists concerning the newer pharmaceutical preparations, as well as describing for the benefit of the student the older therapy, drug properties, doses, etc.

There are chapters upon alimentation, humane therapy, anaesthetics, ionic medication, and others, together with a rather full discussion of pharmacy and ethics in its various relations.

W. S. H.

**TEXT BOOK OF MASSAGE AND REMEDIAL GYMNASTS.** By L. L. DESPARD, Member and Examiner Incorporated Society Trained Masseuses. Second edition. London, Henry Frowde, Hodder & Stoughton, Warwick Sq., S. C.; Oxford University Press, 35 West 32d Street, New York City. Price, \$4.50.

This book, written for the benefit of students of massage, covers about four hundred pages, and includes a consideration of anatomy, physiology, the technique and practical application of massage, active and passive remedial movements, and electro-therapeutics, as well as passing mention of certain local applications, etc. The preface emphasized the fact that the book is not meant to fill the place of a competent teacher. Over half the volume is devoted to anatomy, and the descriptions are, perhaps, as clear as such a brief didactic presentation could make them. It seems as though more emphasis on surface anatomy would be particularly valuable to the class of readers for whom the book is intended.

There is included a specific consideration of a large number of injuries and diseases, with special reference to the indications for physical treatment. There is little said about individualization, perhaps because that should rightly be the function of the attending physi-

cian, a function, by the way, which most physicians are quite incapable of fulfilling. There is much in the book which should stimulate and encourage the physician to make more use of this valuable aid to therapeutics.

In construction, the work comes up to the standard of the Oxford University Press, except that the narrow margins give it a somewhat cramped appearance.

T. H.

THE CARE OF THE SICK ROOM. By ELBRIDGE GERRY CUTLER, M.D. Cambridge, Harvard University Press, 1914.

One of the series of "Health Talks," edited by a committee of the Harvard Faculty, which accurately outlines in short space the best ideas as to the environment and equipment of the room in which to take care of a patient in the home, whether that home be the apartment or the more pretentious residence.

The authority of the author makes the book of more than temporary value. The subject has been well thought out, and the book is most satisfactory.

W. S. H.

REDUCING WEIGHT COMFORTABLY, the Dietetic Treatment of Obesity. By Prof. GUSTAVE GAERTNER, M.D., Vienna, authorized translation in English. J. B. Lippincott Co., Philadelphia and London. Price, \$1.50 net.

This little book tells in a particularly readable manner Prof. Gaertner's method of treating obesity. Following are some of the principal points in his method:

No obesity cure without dieting, and dieting is the whole of the cure.

All articles are rigidly weighed: "no cure without the scales."

All forms of athletic achievement are forbidden while under treatment.

The diet is arranged to reduce the weight by a small fraction daily which, in an otherwise healthy person, is from .15 to .2 per cent, or about two pounds in a week.

The daily fuel ration is placed at between 800 and 2000 calories, according to the individuality of the patient.

The patient can eat everything that he is accustomed to eat, though with restrictions in quantity. Bread is especially restricted.

Water is allowed freely with meals and between meals.

E. E. CORNWALL.

## Deaths

PATRICK W. CREMIN, M.D., New York City, died October 17, 1915.

FRANK HERBERT DANIELS, M.D., New York City, died October 30, 1915.

CHARLES K. FRAZIER, M.D., Cobleskill, died October 21, 1915.

JOHN HENRY HUDDLESTON, M.D., New York City, died October 30, 1915.

GEORGE R. KUHN, M.D., Brooklyn, died November 5, 1915.

HERBERT A. MORSE, M.D., Batavia, died October 15, 1915.

JOSEPH JEROME NOLL, M.D., New York City, died October 17, 1915.

SIGMUND TYNBERG, M.D., New York City, died November 3, 1915.

## In Memoriam

EDWARD SPRAGUE PECK, M.D.

MEMORIAL AND RESOLUTIONS ON THE DEATH OF DR. EDWARD SPRAGUE PECK, READ AND ADOPTED AT THE STATED MEETING OF THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, OCTOBER 25, 1915.

Edward Sprague Peck, M.D., was born in Burlington, Vt., October 24, 1847. He was the son of Theodore Augustus and Delia Horton Safford Peck.

Dr. Peck was graduated from the University of Vermont, in 1864, and received his medical degree from the same university four years later. He practiced in New York City for two years and in Vermont for five years, going abroad in 1875 to pursue studies in Ophthalmology, Otology and Laryngology at the Universities of Berlin, Erlangen, Bavaria, Zurich, Vienna and Paris. He passed the winter of 1877-1878 in London, attending the clinics of the Royal Ophthalmic Hospital at Moorefields, and the Middlesex Hospital. Upon his return to the United States, in 1878, he devoted himself to the eye, ear and throat work in New York City.

Dr. Peck was connected at different times with the Kings County Hospital, Kings County Lunatic Asylum, Northwestern Dispensary, Eastern Dispensary, Bellevue Hospital, City Hospital (Blackwells Island), St. Elizabeth's Hospital, the Montefiore Home and the Post-Graduate Medical School and Hospital. He also held the Professorship of Diseases of the Eye and Ear in the University of Vermont. He was a member of the Burlington Medical and Surgical Club, Chittenden County Medical Society, Vermont State Medical Society, Medical Society of the County of New York, of which he was a member of the Board of Censors; the Medical Society of the State of New York, American Medical Association, New York Academy of Medicine, Physicians' Mutual Aid Association, of which he was for many years the Assistant Secretary; Northwestern Medical and Surgical Society, Medical Association of the Greater City of New York, the New England Society, and the New York and Brooklyn Society of Vermonters. Dr. Peck was critic and reviewer of the *New York Medical Record* for over twenty years, and was the author of many medical papers.

He is survived by his wife, Amelia Ames Walcott Peck, and four children—Edward Stuart, Eva Walcott, Douglas and Harold Walcott Peck.

Dr. Peck was a man of high ideals. He was, in fact, an example of the best type of medical man. He believed in the necessity for thorough preparation for his work, frowned on pretension and anything that savored of unethical practices, and shrank from notoriety. He was fond of teaching and imparted his knowledge freely to those who were qualified to receive it. He always endeavored to improve the position as well as the condition of medicine and medical men. His services to this Society were of the highest order. He was generous to his fellows, professionally and pecuniarily, a genial gentleman and a constant friend. By his death this Society has lost a faithful officer and a valuable member.

Dr. Peck was a man of integrity and of the highest honor, and was loved by all who had the privilege of knowing him. In his bearing to his patients he was sympathetic and tactful, and derived his greatest reward in watching the beneficial result of his treatment of them. He was a most genial and devoted friend.

To Mrs. Peck and the members of his family, we extend our condolence and sympathy.

JOSEPH B. BISSELL,  
JOHN E. WEEKS,  
SAMUEL LLOYD.



# NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

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## EDITORIAL DEPARTMENT

### MONSTROSITIES, MENTALLY DEFECTIVE AND PHYSICALLY DEFECTIVE INFANTS.

IT is a most deplorable tragedy to the family and to the State when a monstrosity is ushered into the world from the womb of its mother. Akin to the foregoing, but less tragical is the birth of an irreparably mentally defective infant. Least tragical is the physically defective offspring.

Among the first the acephalic can be identified whose life Nature mercifully terminates; among the second the idiotic; both hideously deplorable objects to contemplate, among the third the physically defective, yet possessing normal mental endowments. The science of the surgeon or orthopedist can overcome to a degree the physical deformities of these unfortunates and the child can become a useful member of society, nay, even an ornament of which many instances are extant in art, science and literature.

We shudder at the birth of a monstrosity or an idiot and our sympathy goes out to the parents, while the wish is father to the thought that nature, in her abhorrence of the blot which she has cast upon her beauty, would withhold

her vivifying power and permit death to remove the stain.

We who believe in a Divine Creator, accept the dogma that at the moment of conception, a soul or spiritual essence enters into the result of fecundation, the embryo, and there remains during all its development into a distinct individual human being. It is decreed by Divine Law "Thou shalt not kill." Therefore, this embryo, to its full evolution through all its transitional stages, has the right to live. No government has the right, moral or ethical, to destroy an innocent being, nor can it give that power to physicians, no matter how desirable at times it may seem to be for the good of the new-born, for all nations support the maxim "Evil is never to be done that good may come of it." A defective infant is not an aggressor; it is what nature, through its parents, made it. Compassing its death is murder.

Wherein the fault lies we do not care to hazard, but it is deeply to be regretted that the daily press throughout the country has sensationalized an incident of obstetric practice not uncommonly met with by physicians who, viewing the sacredness of their knowledge, have

shielded the parents from shame, and the public from a revolting exposition of a subject which must have filled every expectant mother with a sense of fear. If there is aught in the theory of prenatal impression no one can tell what harm may follow this deplorable publicity.

In the case of the Bollinger infant, which has given rise to the foregoing comments, the physician who permitted this defective to die through his refusal to perform a simple operation, assumed the position that he had the consent of the infant's parents to exercise his own judgment and that his judgment dictated death because it was better for the child than life. He arrogated to himself the right to decree death to an innocent human being—a power beyond the State or Church to grant the right of the assumption of this power—the consent of the mother and his own conscience. The mother in her puerperium, whose reasoning powers would be questioned in any court of justice—his conscience, intangible, but to him superior to divine, human and ethical laws. If we, as physicians, possessed this power of determining life or death to defective infants by means of starvation, more cruel than by medicine or knife—what possibilities for crime?

Is it conceivable or would it be possible with our fallible human understanding to be able to decide the extent of defectiveness that would merit death? Why argue along lines so opposed to all law? Let us banish from our minds, as we would thoughts of treason to our country, our right of judgment in so momentous a matter and remain adamant in our inherent conviction that it is our duty not to destroy but to save life. Sentiment can never be the arbiter between right and wrong. Our conscience may acquit us of having committed a wrongful act, but it neither permits, justifies nor atones for such a deed. If a physician believes that an operation is necessary to save life and that without it death would ensue, his duty is to operate. Where it is a matter of merely prolonging life for a definite period, then his judgment is free to follow its

dictates. No matter how formidable an operation may be, if the chance of recovery is but one in a thousand and *if the intent is to accomplish good*, the surgeon is justified in his procedure.

According to the religious tenets of many practitioners of medicine, abortion is never permissible, even to save the life of the mother. In the case of an ectopic gestation, where an operation to save the life of the mother necessarily destroys the fœtus, the *object and intent of the operation is*—to save the life of the mother and if in doing this, the fœtus is destroyed, it is an accident in the course of an operation upon another being and no wrong can be attached to the surgeon operating.

This may appear casuistic, but a close analysis will prove it to be otherwise.

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### UNCOVERING AN ULCER.

(An excerpt from a recent communication.)

AMERICAN COLLEGE OF SURGEONS.  
30 North Michigan Avenue, Chicago.  
JOHN G. BOWMAN, *Director*.

September 21, 1915.

MY DEAR DOCTOR:

For your information I sent you herewith reprints of some articles written by Dr. W. A. Evans, which were published in the *Chicago Daily Tribune*, and a dozen other metropolitan dailies on September 19, 20, and 21. We are asking a Fellow of the College in each city or town where the articles were not syndicated to have them reprinted in their respective local papers.

**A**FTER a careful perusal of two of Dr. Evans' articles we commend the courage and sincerity he displayed in his efforts to eradicate the evil of fee-splitting, but doubt the propriety of the method employed.

Fee-splitting in the practice of medicine undeniably exists. It is not in its infancy but full in years, bleary-eyed, flabby-cheeked and pot-bellied. The public has a vague idea that fee-splitting among doctors is wrong because it is condemned in public addresses by eminent mem-

bers of the profession, but it views it in the light of a family squabble. The public is not competent to grasp its full significance nor will it ever be so.

The individual has personal relations with his family physician. That physician is to him, the soul of honor, and however venal other physicians may be, his family medical attendant, is above suspicion. The general public is ever indulgent to academic controversies, the patient, who is chiefly interested smiles complacently, steadfast in the belief that he dwells outside of imposition, spoils and division.

It is our opinion that this evil, born in iniquity and nourished by avarice, can be strangled by the infliction of ostracism by the administrative powers of the profession. What do the debased members of the medical profession care for criticism so long as their interchange of fees is profitable and they remain unpunished? But, let the medical societies expel, ostracize and brand them as outcasts, as Cain was branded, the fear of God and man will be instilled into their souls and reformation will take place or at least prevent others from following in their footsteps. Fee-splitters are offenders against the principles of ethics. Let them be sought out and punished. If espionage be necessary let it be employed. A few convictions will produce a wonderfully salutary effect.

In every large community these fee-splitters are known by common repute. Some of them brazenly admit openly, or by their silence, their practice of this evil. They pursue their way unmolested. The fee-splitters and the fee-takers are equally culpable and stand united in self-defense. The Hippocratic oath and the pledge of the Fellows of the American College of Surgeons, have no more deterrent effect on men who indulge in fee-splitting than had the command of King Canute to stay the rising tide.

We are optimistic by nature, pessimistic by experience. We know fee-splitters, associate with them, listen to their papers read at society meetings, elect them to honorable office and, like a Pharisee, go on our way rejoicing.

## VIABILITY OF THE TETANUS BACILLUS.

WITH the knowledge that we have a number of authenticated cases of tetanus due to infection of vaccination wounds, we are apt to ascribe to that cause cases of tetanus appearing in persons recently vaccinated (or who have received a traumatism from other causes) from four to eight weeks afterwards, even though the wounds possess every evidence of health. A child undergoing the different stages of vaccination is liable to receive an infection at some other point of entrance. Therefore, we are not justified in arriving at the conclusion that such a child, attacked by tetanus has, beyond all cavil, received the infection through the vaccination wound, no other wound being visible.

Medical authorities are not in accord regarding the period of incubation of tetanus but all agree that the more virulent the attack, and that in which the mortality is greatest, the earlier the infection. The average duration before spasms occur is between four and twenty-eight days. With our present knowledge it is but a logical conclusion that if a child should develop tetanus twenty-days after the integrity of the skin at the point of vaccination has been restored it has received the infection through some other source.

Furthermore, it does not necessarily apply that there must be a traumatism for the entrance of the bacillus, although such is usually the case.

Until our knowledge of the life of the bacillus, or its spores, is more accurate we cannot be certain of the time of infection. Dr. W. H. Park, in a report on a case stated, "I have never known a case to develop beyond four weeks, although it is believed that occasionally the spores remain in the tissues for a longer time and that tetanus has developed after injury due to the original wound." This has been experimentally but never practically developed. It is also important to consider that when a case of tetanus develops after a long incubation it is usually of a milder type.

## Original Articles

### WHAT STOMACH SYMPTOMS JUSTIFY SURGICAL INTERVENTION.\*

By MARTIN B. TINKER, M.D.,  
ITHACA, N. Y.

**A** REDUCTION of the present high death rate from stomach cancer and stomach or duodenal ulcer can be accomplished only when agreement can be reached between internists and surgeons as to the indications for operation. I bring this question before you not because I believe that I, or any one else, is in a position to settle definitely just what stomach symptoms justify surgical intervention, but because it is only possible to reach an approximate solution of many of our problems by a study of the results of others and comparison with our personal experience. Stomach symptoms result from such a wide variety of diseased conditions that the situation is at first confusing.

*Elimination of non-surgical cases.*—Our first effort should be to eliminate non-surgical conditions. A reasonably careful routine examination usually suffices for most cases presenting stomach symptoms which do not justify surgical intervention. There would seem to be no excuse for exploration of the stomach in case of gastric crises of locomotor ataxia; the severe nausea and vomiting usually accompanied with headache from eye strain; the vomiting of blood and other stomach symptoms of cirrhosis of the liver; or in the stomach upset from advanced kidney or heart lesions. There remain, however, a considerable number of non-surgical cases in which the stomach symptoms are a prominent feature and in which definite diagnosis is more difficult. The widespread attention now given to abdominal ptosis has sufficiently demonstrated the importance of this condition and its effect on digestion as well as futility of operation in many cases. Certain abdominal aneurysms and chronic nervous conditions also offer great difficulties. In discussing this subject I shall refer to symptoms in the wider meaning of the word as used in most of our text books referring to all evidences of disease.

*Importance of case history.*—Taking first, the subjective symptoms of stomach trouble. There is a very general agreement among all men of experience as to the importance of the clinical history and particularly the early history of these cases. Frequently at the onset of trouble the symptoms are clear and distinctive, while later the clinical picture is obscured because of the symptoms resulting from adhesions, extensive involvement of surrounding organs and impairment of general health. Common to all the chronic dyspeptic troubles such as gall stones, appendicitis and various intra-abdominal forms of cancer, are complaints of pain, vomiting, gas

and distension, burning sensations and eructation of sour or bitter material. In a number of these cases it may be possible to get the early history of pain localized in the region of the appendix or under the right costal border, more or less distinctive of appendix or bile tract involvement, while in the stomach or duodenum cases the pain is more commonly located in the epigastrium. Pain is perhaps the earliest and most persistent of symptoms. It is frequently described as gnawing or boring in character. Whatever its location or character, severe abdominal pain and persistent abdominal pain is usually an indication of serious trouble. The history of relief of ulcer pain by taking food has been emphasized by a number of writers of experience and I believe all will agree as to the value of "hunger pain" when it is possible to get a definite history of this symptom. Gas and distension are complained of by most cancer and many ulcer patients and cause extreme distress later in many cases. Vomiting also occurs in these partly obstructed cases and in the irritative stage with ulcer. Vomiting of blood is usually considered a diagnostic symptom but perhaps is classed more properly by Moynihan as a late complication. Periodicity is common to bile tract difficulties as well as ulcer with intervals of almost perfect relief and little impairment of health until extensive involvement has occurred: The prolonged and fluctuating course of chronic ulcer, with intervals of partial or perfect health; and the history of a steady downward course in cancer of the stomach are very suggestive.

*Examination of the abdomen* early in the disease may give valuable information. Tenderness on pressure over the ulcer, usually in the epigastrium in the vicinity of the pylorus when present is very suggestive, though not nearly as constant as are the points of tenderness and pain over the appendix and gall bladder. Later on visible peristalsis may show beginning of obstruction from developing cancer or adhesions about chronic ulcer. The cases of cancer in which definite tumor is present Czerny many years ago pronounced inoperable and this still holds good in the great majority, but some small movable tumors are readily operable and occasionally a mass of adhesions about chronic ulcer may be mistaken for cancer and such possibilities of mistake justify exploration in doubtful cases. The general appearance is also suggestive. The ulcer patient, however much reduced in nutrition and nervously upset, is not the cachectic, pale, depressed and weakened patient so often seen with cancer.

*Gastric contents analysis.*—Although there is general agreement that we cannot depend upon gastric contents analysis for either a positive or negative diagnosis, it seems to deserve a place among our methods of investigation. Reports from a number of surgical clinics show that chronic ulcer of the stomach and duodenum may

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 29, 1915.

be present in the absence of free hydrochloric acid. That free hydrochloric acid is sometimes present in case of cancer, (Osler and McCrae, 7 out of 87 cases; Mayo clinic, 70 out of 150). That blood both by stomach tests and examination of feces is not found in ulcer cases as frequently as generally supposed. (Mayo clinic, 49 out of 250 cases; Peck, 43 per cent; my own cases just 50 per cent). That blood is not present in more than about two-thirds of cases of stomach cancer. (Mayo clinic, 53 per cent, Osler and McCrea, 30 per cent, personal, 60 per cent.) To add to the confusion, blood is occasionally found with gall-stones and appendicitis. (Brewer and Cole give gastric contents analyses in 5 out of 11 appendix and bile tract cases with blood present in 2; Mayo clinic; blood in gastric contents analyses 15 per cent in 100 gall-stone and appendix cases. In my own cases blood was present in 1 out of 4 gall-bladder and appendix cases with pronounced stomach symptoms.) However, while operative findings indicate that examination for free hydrochloric acid, total acidity and the presence of blood do not give so definite results as some suppose, the gastric contents analysis is frequently very helpful. There is general agreement that hyperacidity with repeated appearance of blood in vomitus and stools strongly suggests ulcer of duodenum of stomach: (a single hemorrhage is generally due to other causes) also that the presence of lactic acid, absence of  $\text{HCl}$ , coffee ground blood and occult blood in the stools, any or all of these when persistent are strong evidence of cancer.

*X-ray study of abdominal conditions.* There is a constantly growing belief in the value of X-ray study of the stomach among all who are interested in this work. In a recent paper by Brewer and Cole, 27 case histories are given and in 22 cases a definite diagnosis was made by the Rontgen method which was proved to be correct in 20 instances. In 11 cases the diagnosis was negative as regards the presence of a gastric or duodenum lesion, although the clinical history so strongly suggested ulcer or carcinoma as to justify operation. Such examination should make it possible to eliminate nearly all cases in which symptoms are caused by ptosis and definitely locate the lesion in a number of cases in which the symptoms are caused by obstruction not in the neighborhood of the stomach. The X-ray gives accurate information regarding the size, position and shape of the stomach, the activity of peristalsis and time of emptying. The contour of the pylorus, whether clear cut on both surfaces; the sphincter about three-sixteenth inches wide, or irregular in contour and wider than normal. The pyloric cap, whether symmetrical and corresponding in size and contour with the pars pylorica or invisible deformed or spasmodically contracted. While it does not always give a positive diagnosis, almost all who are familiar with the work are

agreed that it gives more accurate information than any other method now employed.

My own experience corresponds so closely with that of Brewer and Cole previously mentioned, that I will quote Dr. Brewer's operative findings. In 27 cases the symptoms were sufficiently definite to lead to the suspicion that there was an organic lesion of the stomach or duodenum. In 11 cases the X-ray gave a negative diagnosis, but the clinical history seemed to justify operation. In these 27 cases were found: Cancer of the stomach, 3; ulcer of the duodenum, 7; syphilis of the stomach, 2; or a total of 12 out of 27 in which the lesion was located in the stomach or duodenum. In the remaining 15 cases were found: Chronic appendicitis, 9; lesions of the gall-bladder, 2; gallstone obstructing duodenum, 1; tuberculous glands causing obstruction, 1; adhesion of the colon causing obstruction, 1; no lesion for which surgical intervention seemed necessary, 1. That is, in only 12 out of 27 suspicious cases the stomach or duodenum were at fault, but in 26 out of 27, lesions of sufficient gravity were found to account for the stomach symptoms and appropriate surgery was used for the relief of these symptoms.

In a recent series of 29 personal cases in which symptoms referred to the stomach were the most prominent features the following conditions were found: Cancer of the stomach, 4; ulcer of the stomach, 2; cancer of the duodenum third part, 1; ulcer of the duodenum, 9; perforating ulcer of the duodenum, 1; cancer of the transverse colon, near stomach, 2; chronic inflammation of bile tract, 3; chronic appendicitis, 3; tuberculosis of the cecum, 1; movable kidney, 3; (in one of the movable kidney cases the displaced kidney was adherent directly over the duodenum). It does not seem important from the patient's standpoint whether the stomach symptoms are caused by stomach lesions so long as a removable cause is located and it seems very doubtful whether it will ever be possible to arrive at a positive diagnosis in many of these cases in which organs so closely related anatomically and functionally are involved.

The present situation seems especially unfortunate as regards stomach cancer. Writing fifteen years ago Osler and McCrea say: "The prospects will be better when we study every case of stomach trouble (other than transient) between the ages of forty and sixty, with a view to the possibility of malignant disease. If we hear that a woman of uncertain age complains of a bloody discharge from the uterus, the possibility of malignant disease is at once thought of; but how many of us consider a like grave possibility when a patient of the same age complains of stomach symptoms perhaps with a moderately sudden onset? With the graver conditions kept in mind, they are less apt to be overlooked in the diagnosis. In other

obscure abdominal disorders operation is a common procedure—why not in gastric conditions? The risk is comparatively slight, and is much less than that of an undiagnosed neoplasm. In a suspected case when under treatment there is no improvement in a few weeks, an exploratory operation is justifiable.”

A study of the results of the most experienced workers in this field leads to the conclusion that surgical intervention is justified in a large number of cases on the basis of a carefully taken history alone. When the history brings out repeated attacks of indigestion with intervals of good health, severe epigastric pain, frequent vomiting, hunger pain and relief by taking food, unrelieved by a reasonable number of weeks of medical treatment, operation seems justified. If, in addition to this, the X-ray shows delay in emptying the stomach from partial obstruction, deposit of bismuth in chronic perforated ulcer or great irregularity in stomach contour, the indication seems still stronger. If gastric contents analysis shows hyperacidity in ulcer cases or absence of free hydrochloric acid with lactic acid in cancer cases this is also strong confirmatory evidence. Blood, though not so frequently present either vomited or obtained microscopically or shown as occult blood in the stools is also valuable evidence.

While it may be impossible to arrive at a positive diagnosis in many of these cases, it is almost always possible, I believe, to say that serious trouble is present inside the abdomen, that the symptoms are of sufficient gravity to justify surgical intervention. Almost always it will be possible to determine with some degree of certainty whether the stomach and duodenum are at fault or whether the stomach symptoms are caused by lesions elsewhere in the abdomen. All modern means of diagnosis should be employed and the lesion located as definitely as possible so that in the majority of cases the operation is not really exploratory, but we may be able to attack the lesion causing the symptoms without undue handling of the intestines or manipulation inside the abdominal cavity.

*Discussion on Papers of Drs. Tinker and Friedenwald.\**

DR. LEON T. LEWALD, New York City:—I wish to speak briefly on the differential diagnosis of syphilis from cancer and ulcer of the stomach. This is one more important point in the diagnosis of gastric and duodenal ulcer that has to be considered.

In a series of stomach cases at St. Luke's Hospital, New York, in the last two years, we have had eight which ordinarily would have been considered ulcer or carcinoma. These cases were reported by Dr. Downes and my-

self about a month ago before the New York Surgical Society. In the discussion Dr. Willy Meyer reported a case in which he had resected for supposed carcinoma the pyloric end of the stomach. The patient succumbed to the operation. A microscopical examination showed it not to be carcinoma but a syphilitic lesion of the stomach.

In another case at Bellevue Hospital there was a fatal hemorrhage of the stomach, and this case of supposed ulcer turned out to be on microscopical examination a syphilitic infiltration of the stomach, so that we have a difficult problem to decide in certain cases. If we could make a positive diagnosis of syphilis of the stomach, it might be cured without operation; unless the condition is such that marked stenosis has gone on to that stage where it may be necessary to operate to relieve obstruction, but it is unnecessary to do an extensive resection.

I will now report upon Roentgen findings in two or three cases in which we have made a positive diagnosis and operated, removing sections.

In these cases symptoms were very analogous to those of carcinoma or ulcer. The patients had vomiting, pain, tenderness, emaciation and hemorrhage. They may or may not give a history of lues, but a positive Wassermann reaction may be obtained. All of our cases have given a positive Wassermann reaction.

We had a young subject in our first case and made a diagnosis of congenital syphilis. This child, 13 years of age, was supposed to have stenosis of the esophagus. There was no history of the child having swallowed caustic; but on examination we found that the child had a very small cardiac pouch so that fluids regurgitated or backed up into the esophagus. The patient had constant vomiting, due to the stenosis of about half of the body of the stomach. This left a narrow place, and all this was due to a syphilitic infiltration. We found connective tissue when we operated on this case. Some of the bismuth mixture went down into the pyloric region. In this case the stomach was a sort of bumb-bell shape in contradistinction to the hour-glass stomach in which there is a narrow neck between the two pouches. The stenosis in this case was so marked and the patient was so much emaciated that she was immediately operated upon. A gastro-enterostomy was done and the patient began to improve immediately. There was some difficulty in feeding this patient. She began to vomit two weeks after the operation, and although the gastro-enterostomy opening was broad she took too large quantities of food so that the radiograph showed that the quantity was too much for the cardiac pouch to hold safely.

\* For Dr. Friedenwald's paper see page 285, July issue, NEW YORK STATE JOURNAL OF MEDICINE.

On being fed smaller quantities at shorter intervals, she immediately improved.

There was another case of a young subject, about fourteen, under observation for syphilis at the Rockefeller Institute Hospital. Patient gave a positive Wassermann, and considering the abdominal distress it was a question whether he had appendicitis or not. Patient was sent to St. Luke's Hospital for operation. He was not operated. Stenotic condition of the stomach was observed, he was put under vigorous treatment and is now practically well.

These cases, if obtained early, may be cured, many of them without operation.

This is another type of case in an older individual somewhere in the thirties. The stomach shows a marked narrowing over the pyloric half, and the pylorus is held open, it is caught by a cicatricial tissue and is held open so that it empties rapidly. Of course, that occurs in carcinoma, so it would be exceedingly difficult to differentiate these cases if you omit making a Wassermann reaction. Unless a Wassermann reaction is made you may go in and resect the stomach and find it to be a syphilitic condition. This patient was not operated, but put on vigorous treatment and has made a good recovery. He has gained thirty pounds in weight. Radiographs of the same case also shows the small size of the stomach and the infiltration has caught the pylorus and held it open so that two minutes after a bismuth meal it runs out and fills the whole intestinal tract; and the stomach empties rather rapidly, except for some bismuth caught up in the cardiac end of the pocket.

Another case shows that you could not go by the above sign alone. There is a filling defect here at the pyloric end of the stomach. This patient is twenty-three years of age. Wassermann reaction was positive, but the defect is no different than that you would find in carcinoma in that region. The same case in six hours shows a residue as in carcinoma. After twenty-four hours some bismuth remains in the stomach. This patient was operated on on account of stenosis, a section was removed, and a gastro-enterostomy was performed by Dr. W. A. Downes. Dr. F. C. Wood reported that sections examined under the microscope showed marked infiltration and the presence of giant cells and no evidence of either ulcer or carcinoma, so that syphilis was the only reasonable presumption. On account of the giant cells, he thought the specimen was one which resembled tuberculosis.

DR. ROBERT T. MORRIS, New York City:—I want to say a word or two in connection with Dr. Tinker's paper. During the past two months I have seen two cases operated upon by very famous surgeons for gastric symptoms warranting operation, but nothing was

found. The patients continued to suffer, and when examined by an ophthalmologist were found to have eye strain. One of these patients told me last week that she had lost her dyspepsia for the first time after having her eyes tested. She improved rapidly, and evidently the case was one of eye strain.

Let us go back to the philosophy of the subject. Many years ago Ross and Sherrington showed us that many organs sent an afferent impulse to certain segments of the spinal cord, and the efferent impulse goes to the peripheral region. Head then classified the zones with which you are familiar. That gives us one point from which to start in our reasoning. We have another similar group of reflex disturbances in which the afferent impulse is carried to the higher or cerebral center, and the efferent impulse influences the gastric ganglia, and in a great many cases eye strain has been overlooked. In many of these cases there is no necessity for an operation, and if they are worked out carefully by an ophthalmologist a certain proportion of them are instances which improve so rapidly and so distinctly that they are evidently cases of eye strain. Do not misunderstand me. The percentage of these cases is not large, but there is a definite percentage of them with gastric symptoms and they are simply cases of eye muscle imbalance and we must at least get negative or positive testimony from these cases. That is a fair statement. If a patient comes to you for examination in reference to any gastric symptoms, if you find symptoms indicating eye strain, if that patient is studied carefully by an ophthalmologist who is competent to work out the eye muscle imbalance, the patient may be relieved. That is cerebral.

Now for the cord reflex. When the appendix undergoes fibroid degeneration, the hyperplastic tissue contracts, you get an afferent impulse toward the cord and an efferent impulse making a disturbance among the gastric ganglia. In fibroid degeneration of the appendix the lumbar ganglia are sensitive. There is no direct connection anatomically, but if you go back to the premises stated by Ross and Sherrington, we have an opportunity for understanding the philosophy of this situation.

DR. HENRY L. ELSNER, Syracuse:—The "internist" or the "general practitioner" as he has been characterized this afternoon appreciates very fully the enthusiasm of the surgeon. There are, however, in connection with the charges which are usually brought against the "internist" that these cases do not reach the internist soon enough—some facts of considerable importance. In the first place, we find as a result of considerable experience the very important reason for not delivering these cases to our surgical friends is the fact that the patients do not come to us. The stomach is enormously tolerant. A man who has a slight indigestion

does not promptly seek the physician. That is an absolute fact. When these cases do present over ninety per cent of them already have a palpable tumor. I have kept records of my cases and find the majority of cases have palpable tumor when they come to the doctor's office. Then they are easy of diagnosis. A careful examination shows that they have metastases to the glands, the X-ray examination under such conditions tells us nothing which we do not already know. We do not need the X-ray under such conditions but for early diagnosis. All are sufficiently proficient to make a diagnosis of advanced cases. A mere tyro is able to make the diagnosis under these conditions.

I enjoyed listening to my friend Dr. Morris because he gives you a plain statement. Now, I do not believe that the internist would really insist upon operating upon a case of eye strain through the epigastrium; at any rate, I know of no case in which the internist has made any such mistake.

Now comes the question of what are the further facts in connection with diagnosis? They are these: Drawing my deductions from the papers read here this afternoon, the surgeon and internist being thoroughly honest, must reach the conclusion that if we would save the lives of these patients we must begin the same campaign of education which we have waged against tuberculosis. We will not succeed in these cases in any other way. We must educate the masses as well as the physician; we must lead a man to understand that when he is forty years of age and has continuous symptoms referable to the stomach, he is not to delay, but he is to go to a physician, and after a while we will be able to deliver these patients to the surgeon ready for an exploration which all of these gentlemen have recommended because it is the only way of considering all symptoms, and it is the only way to reach a positive conclusion.

Dr. Friedenwald brought out a splendid point in connection with the latency of cancer. I called attention many years ago to the long periods of latency which existed in many cases of cancer. It is a fact which is positive that very often we have early symptoms, that is, acute symptoms, similar to those of active carcinoma, followed by a period of latency during which there are almost no symptoms; then these cases suddenly exacerbate and we have rapid progression.

When these cases come to us they have a palpable tumor, but there is a class of cases which we have recognized, including a symptom which I think is of the greatest importance, and that is of increased resistance in the epigastric region. In the case of a man beyond middle life, who has continuous gastric symptoms, who never had gastric symptoms before, who has lost some flesh and possibly has lost his appetite, with an increased

resistance in the epigastric region, let it be suspected that such a patient has carcinoma of the stomach. Mayo has well said that carcinoma of the stomach is as operable as surface carcinoma, and offers the same good prognosis, but the patient must be operated early.

This symposium can only result in the greatest benefit to many if we appreciate the facts that there is no easy way to diagnosis of gastric cancer; that the paramount issue is early diagnosis, and if we do make a mistake occasionally and open the abdomen and fail to find carcinoma, we will do exactly what Dr. Tinker has said, we will prove that there is some other condition which demanded surgical intervention. We have all had such experiences. We ought not to be discouraged in connection with this matter, for as I read the literature and study the statistics which the Mayos are offering and Moynihan and Mikulicz, and which have been improved on the Continent, there is nothing discouraging about it except this fact that these patients do not come to us sufficiently early. Let us teach them what we have taught concerning tuberculosis, and if we do that, I am sure the mortality from carcinoma of the stomach will be enormously reduced and life greatly prolonged.

DR. JAMES T. PILCHER, Brooklyn:—It has been a pleasure to listen to two such scholarly papers that have been so extremely well balanced, so much so that one could not help but notice that they came to exactly the same conclusions. There is an analogy, for instance, between cancer of the breast and cancer of the stomach. It may not be altogether appreciated that cancer of the stomach and cancer of the breast occurring in young people have a greater malignancy than in people who are older, for the reason after a person progresses in life to the age of forty-five, from then on their lymphatics become more or less inactive, and they do not carry metastases so rapidly. Therefore if one has a patient with cancer of the stomach, the older the patient is the better the chance the surgeon has for effecting a cure.

It would be interesting, indeed, with the vast experience Dr. Friedenwald has had to know how many of his cases have been operated upon of the thousand which have come under his notice and what the ultimate results of these have been. He quoted two hundred odd all of which were dead. That is not a fair statistic because we have had a number of cases in which there were large palpable tumors which have been resected and the patients are perfectly well today, the period from the time of the operation extending over three, five and even ten years, so that one should not be deterred in referring a case to a surgeon merely because he can feel a tumor through the abdominal wall. As a rule, in these cases refinements of technic in



examination are not necessary. The clinical history, as Dr. Elsner has pointed out, is sufficient. We do not have to have a serological test, nor do most of the patients need to undergo the tedium and discomfort of extraction of the stomach contents. As a rule, a patient presenting the symptoms of dyspepsia which are unrelieved for a period of two or three weeks or a month, as was pointed out by Dr. Friedenwald, should no longer be considered a medical case. The physician is really holding himself morally responsible for that patient's death if he is not turned over to a surgeon, or at least to have one called in consultation.

In these cases we have found in the last two or three years, with the technic developed so efficiently by such men as Dr. Le Wald, Dr. Case and others, that these minor lesions of the stomach in elderly people are positively and absolutely demonstrable, and when any such defect in the musculature of the stomach wall or the emptying power of the stomach can be demonstrated by the radiograph or by fluoroscopic examination they are surgical cases as there is always the element of cancer to be considered.

DR. CHARLES G. STOCKTON, Buffalo:—I am at a loss to know why I should be classed as one of the artists because I supposed the artists in our profession belong entirely to the surgical side. I am very glad to have the opportunity of saying how much I appreciate the admirable papers read this afternoon. I do not see how they could be improved upon. It seems to me, that the conclusion reached in the matter of early diagnosis of cancer by each of these gentlemen, especially so well brought out by Dr. Friedenwald, is the fact that the very early diagnosis of cancer is for us yet an impossibility. I think that when a patient has the symptoms so well described by Dr. Elsner, such a patient is often beyond the early stage of cancer. When a man of middle age has lost his appetite, has a sudden disturbance of the function of his stomach for the first time in his history, and is losing weight, I do not think we should hesitate to say that that man should have an exploration, and he has stated it very admirably. I feel very often when we reach that condition the cancer is so far advanced that our surgical friends will criticize us. I believe that adenocarcinoma starting in the submucosa goes on silently until metastases have begun to develop, producing that state of affairs which we can recognize with definiteness by the means we now have. However, in that class of cases the early diagnosis of carcinoma of the stomach is an accident. Occasionally we make it, and very often we do not. At any rate, we can only approach the subject of the early diagnosis of carcinoma of the stomach by such discussions and frank admissions as we have

heard today. I feel that this discussion today has been extremely frank and absolutely sincere, and I think it brings us nearer to the conception of what we should stand for in the early diagnosis of cancer of the stomach.

DR. PARKER SYMS, New York City:—I think that we all must be congratulated on having heard such excellent papers, and I feel myself I have learned a great deal, especially from the paper of Dr. Friedenwald. I agree with Dr. Stockton that the early diagnosis of carcinoma of the stomach is almost impossible, and I also believe that it is made accidentally.

The question of our results in operating on carcinoma depends upon how early we attack the disease surgically, and if we are to assume that early diagnosis deliberately made of carcinoma of the stomach is almost impossible, certainly deliberate surgery for the cure of this disease must fail very largely. Dr. Bloodgood has so well expressed this thing in speaking of carcinoma in general when he said that the results are in inverse proportion to the accuracy of the diagnosis. That is true of carcinoma anywhere. When our diagnosis is positive, in a large percentage of cases our cures will be very few.

Dr. Friedenwald has given us a very interesting statement, and that is in regard to the proportion of cases of carcinoma of the stomach which he has studied in which there was a history of precedent gastric disease. I think all of us have to base our broad knowledge on such facts as these and from statistics taken from the large clinics, and I feel the Mayo Clinic is an example of perhaps one of our best places for study. The Mayos have found that nearly 70 per cent of gastric cancer shows definitely the presence of either existing ulcer or evidence of ulcer which had pre-existed. Assuming that ulcer is a direct cause in the production of cancer, therefore, ulcer of the stomach may be considered as one of the pre-cancerous conditions. Dr. Friedenwald's cases do not bear this out in anything like that proportion. It was a little over 20 per cent where carefully taken histories showed evidences of pre-existing gastric disease. The histories as he found them were those which we recognize as the classical history of gastric cancer, that is, usually of a cancer coming on in an individual who had previously been free from signs of gastric disturbance. That is why the internist could not bring his cases earlier to the surgeon. These patients could not go to the surgeon earlier or rather to the internist, as Dr. Elsner has said. I think myself, as Dr. Stockton has said, when we have well-marked evidence of carcinoma of the stomach, we have a stomach cancer which has gone beyond its original limits. It has extended to the lymphatics and has probably formed metastases in the glands. For some time I was considered a heretic because I claimed for a number of years that gastro-enterostomy

is an absolutely illogical operation *per se* for gastric ulcer. I would like to touch on the various reasons, but there is one that is pertinent to the discussion today. If the statement made by the Mayos is true, that approximately 70 per cent of the cases of gastric cancer are found to be the indirect result, if not the direct result, of preceding ulcer, it leaves an undetermined number of gastric ulcers which are eventually to be the site of gastric cancers. I have held from the beginning that on that hypothesis we should remove the ulcer-bearing and cancer-bearing region at the time of our operation.

DR. I. HARRIS LEVY, Syracuse: We can safely say that today we are seeing cases of cancer earlier than formerly, and that is a point that ought to be emphasized. A short time ago, within three days, I saw two cases of cancer, one a colloid in a man, 29 years of age, whose symptoms dated back only three months. X-ray examination revealed a very small stomach and the usual picture. The case was inoperable. The other was a case of cancer of the cardia in a woman of 30. We should remember that cancer develops before the fortieth year of life, and if a patient gives us a history of sudden onset and the usual picture that we have learned to mean beginning carcinoma, it should be at once turned over to the surgeon.

On the other hand, I am not in sympathy with the statement that every patient over forty showing stomach symptoms should be turned over to the surgeon. Nor that every chronic case of stomach trouble is surgical. Hyperchlorhydria with its associated symptoms is frequently a functional disturbance. It does not always mean ulcer, gallstones or chronic appendicitis. I find it very frequently with arteriosclerosis. Appropriate medical treatment is necessary and not surgery.

DR. ALLEN A. JONES, Buffalo: The papers presented to us this afternoon have been so admirable and the discussions have been so able and so full, that there does not seem to be anything left to be said. I do not know what to say except to mention a very useful and simple procedure in the diagnosis of gastric conditions. Dr. Einhorn devised and popularized some years ago what is known as the thread test, and in speaking of occult blood examinations and their uncertainty, I wish to make a plea for Dr. Einhorn's thread test. It is one of the most useful and simple procedures we have in differentiating between lesions of the stomach and duodenum. If the thread is passed into the duodenum, and ulcer be present on either side of the pylorus, a definite stain is practically diagnostic. If the

bucket does not pass into the duodenum after several trials it should warn us that there is some reason why it does not, and strengthen the feeling that an exploratory examination is advisable.

DR. MARTIN B. TINKER, Ithaca (closing): I was very thankful I mentioned eye strain as a possibility of gastric symptoms, when Dr. Morris began his discussion. My strongest statement with regard to gastric cancer was quoted from an internist, Osler, published fifteen years ago.

As Dr. Pilcher suggests, there is a great need for surgeons to consult the internist and the laboratory worker. He spoke of the favorable results in some of these cancer cases when seen early and treated properly, and I am sure that is what makes it seem worth while doing surgery. We should strive to hammer in the importance of trying to do something for these patients; that a certain number of these patients instead of appearing to be pretty bad, perhaps even hopeless, get well and stay well.

Dr. Stockton spoke of the impossibility of making a diagnosis in the early stages. We all agree on that, and I did not intend to convey any other idea. If we are going to wait for a positive diagnosis in these cases, a great many needless deaths will result, and this was the plea I meant to put forward, that we should operate upon cases presenting sufficient evidence of intra-abdominal trouble, whatever that evidence may be, and that in quite a large percentage of cases we will find a means of relieving the serious symptoms, whether the trouble is located in the stomach, duodenum or in various other intra-abdominal organs.

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## A PATHOLOGICAL STUDY OF SYPHILITIC AORTITIS AND ITS SEROLOGY.\* †

By JOHN H. LARKIN, M.D.,

and

I. J. LEVY, M.D.,

NEW YORK CITY.

THE Wassermann reaction as a diagnostic factor in syphilis holds an unique position in clinical medicine. There are those who believe it an infallible method in proving the presence of syphilis, but there are many who are

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† From the Strecker Memorial Laboratory, City Hospital, N. Y.

skeptical about accepting a serological diagnosis. Neither the serologist nor the clinician can hope definitely to ascertain the value of the complement fixation test in lues. As in all other problems in medicine, it is the work of the pathologist to demonstrate the probable focus of infection in an individual with a positive Wassermann reaction, in whom there is no clinical evidence of syphilis. With this in view it occurred to us to check the serological diagnosis on the autopsy table; that is, to find some definite pathological explanation for this type of reaction in so-called latent syphilis. Since syphilis primarily attacks the blood vessels; in fact, it is regarded as a disease, the manifold pathological changes of which have their origin in diseased blood vessels, we turned our attention first to the aorta.

Though the pathology of specific aortitis is fairly well understood and its various phases have been accurately described, and though there is a classical method of performing the Wassermann reaction, the problem presents many difficulties. Luetic aortitis, grossly and microscopically, presents many characteristic features, so our task is chiefly to point out what are the primary and early changes of a syphilitic process in the aorta. Since numerous modifications of the original Wassermann are employed in doing the reaction, it is essential to study and to determine a certain routine serological procedure, which, with the greatest degree of accuracy will diagnose the presence or absence of specific changes in the aorta.

We obtained aortas from every case autopsied in the past four years in the Strecker Memorial Laboratory, on which a serological examination of the blood had been made before death. Unfortunately, this only includes a small number of cases sectioned. With the aid of serology we have been able to point out definitely that the diagnostic lesion of specific aortitis is a histological one, and in the routine examination of a series of aortas a surprising number reveal this lesion in varying degrees, without giving any gross evidence of syphilitic infection.

In most instances, in those who have died of their aortitis the gross appearance of the aorta presents a typical picture. The lesion is confined to a definite portion of the aorta, usually the ascending and transverse parts, with a sharp line of demarcation between the lesion and the remainder of the aorta which appears fairly normal. The involved portion presents either a diffuse dilatation, or a saccular aneurismal pouch, and the normal glistening appearance of the intima is lost, being replaced by confluent, pearly-white, elevated scar areas; scattered through which are often seen yellowish patches of fatty degeneration. To the touch it is hard, thickened and fibrous. Though this gross appearance is characteristic, it is by no means diagnostic. In our series of seventeen cases eleven died of aortitis, and a little over one-half of

these presented this typical picture; the others showed either a diffuse process, the dominating feature of which was an athero-degenerating sclerosis, superimposed upon a syphilitic process, or only slight changes in the intima were appreciable.

Chiari, in 1903, gave an excellent description of the microscopical changes. He calls attention primarily to the striking appearance of the media, in which one notes small areas of granulation and fibrous tissue, often with central necrotic zones and newly-formed vascular elements, surrounded by infiltrating round cells. He also pointed out that in the adventitia the vasa vasorum were distinctly thickened, and that a perivascular, round-celled infiltration was associated with these changes in the adventitia. He regarded the changes in the intima as secondary and presenting nothing characteristic of a luetic process, but showing various degrees of a simple atherosclerosis. Chiari's description, however, is only typical of an advanced case of luetic aortitis. It is the histological picture seen in the aortas taken from those who have died of the disease. That an earlier process of luetic aortitis presents quite a different picture we feel confident from a study of the material at hand. A productive inflammation in the aorta to our mind is pathognomic of syphilis, and histologically it can easily be differentiated from the simple degenerating process in atherosclerosis. The earlier changes we have seen in aortas from individuals dying of tabes or syphilitic meningomyelitis,—and, in several instances, from a non-syphilitic disease. The adventitia, undoubtedly is the site of predelection and here one sees the earliest evidence of a productive inflammation. Grouped around the slightly thickened vasa vasorum there is a distinct round-celled infiltration. Associated with this perivascular inflammatory reaction the adventitia appears thickened; the fibers are coarser and heavier, and the thickening is directly proportionate to the degree of infiltration. It is important to note in this early stage that the inflammatory process is usually confined to the adventitia, and that the medial coat presents no evidence of a fibrous or lymphoid infiltration. In many instances, however, with a moderate perivascular infiltration in the adventitia the media and intima may be the seat of a marked degenerative process.

From a thorough study of a number of syphilitic aortas it is evident that a perivascular round-cell infiltration is a constant feature of the diseased process. The typical cells closely resemble lymphocytes, small round cells staining intensely with a nuclear stain. With these one sees other types,—endothelial and plasma cells, but these are by no means invariably present.

That this histological lesion in an aorta; namely, perivascular cellular infiltration, has syphilis as its etiological factor, and further,

that it is diagnostic of luetic aortitis, we base our opinion upon the following facts.

Eighteen of the forty-two aortas examined presented this picture, and seventeen of these gave a positive Wassermann during life. In other words, 94 per cent of the aortas showing a round-cell infiltration gave a positive Wassermann reaction. On the other hand, twenty-four aortas presented no evidence of a perivascular infiltration, and twenty-two of these gave negative, while two gave positive reactions; that is, 91 per cent of these aortas gave negative complement fixations. G. Gruber working with post mortem serum in a series of 106 cases of syphilitic aortitis obtained identical results, 94.3 per cent positive fixations, and he says that any evidence of a productive inflammation in the aorta with a positive Wassermann gives us at least 0.9 per cent assurance that this type of inflammation is a result of syphilitic infection, even though the dominating feature is one of deforming atheroscleroses.

Such lesions as ruptured aneurism, and aortitis with pure aortic lesions, undoubtedly syphilitic in origin, histologically present this in a marked degree. In other general metabolic and infectious processes, such as arteriosclerosis, interstitial nephritis, chronic ulcerative tuberculosis, carcinoma, pneumonia, vegetative endocarditis, pernicious anemia, the aortas showed no such histological picture.

Though serology gives us definite proof that syphilis produces a typical aortitis, as further evidence in support of our view, we have attempted to find the treponema pallida in our preparations. Wright and Richardson, with others, claimed to have demonstrated the spirochæta in the aortas of acquired syphilis. We do not hesitate to admit that we have been unsuccessful. We have seen many artifacts in our preparations, which by less skeptical men could easily be interpreted as spirochæta. Both Gruber and Fukuski have also failed to find the spirillum in their large series of cases.

The most common complication of syphilitic aortitis is an insufficient aortic valve. In a study of forty-two cases with various types of aortas the aortic valve in fifteen showed evidence of disease. In seven of these fifteen valvular lesions the mitral valve was normal, and the aortas of these seven cases, in which only the aortic valves were involved, gave marked evidence of luetic aortitis, and the serology was positive, with the exception of one. In this case the aortic valve was practically destroyed with a vegetative ulceration; the serum was negative, and the aorta normal. Of the remaining eight cases, both valves were diseased; six consisting of fibrous changes, and two with acute vegetations. In only one aorta with thickened fibrous changes in both valves was there evidence of luetic aortitis, and in this case also the serum was positive. The seven other cases showed

no productive inflammation in the aorta, and the complement fixation tests were negative. From this it seems quite evident that pure aortic insufficiency, with the exception of infectious endocarditis, is undoubtedly of syphilitic origin. With both valves involved the probability of a syphilitic infection of the aorta is small, an atheromatous or an infectious process should suggest the probable origin.

Luetic aortic insufficiency is, in most cases, probably a late process. In our seven cases six complicated those cases which showed marked changes in the aorta, all of which died of their vascular lesion. In other words, six out of ten specimens of late aortitis, or 60 per cent of the cases of advanced aortitis had the aortic valve involved. On the other hand, of seven cases of early luetic changes the aortic valve was part of the process only once, giving in our whole series the complication in about 40 per cent of the cases. This practically agrees with Stadler's findings, in which he states that two-thirds of his cases dying of their aortitis had insufficient aortic valves, while only one-third of his luetic aortas were complicated with a diseased valve.

Ruptured aneurism is a serious, though not so frequent a complication. Of course it is only met with in advanced cases. In our series of eleven dying with aortitis, three succumbed to a rupture of an aneurism. In two the rupture was in the thoracic cavity. In one the aneurism was abdominal and had eroded the vertebra almost to the cord.

Cerebral luetic endaritis is a complication of syphilitic aortitis as often as aortitis complicates it. In our eleven cases of fatal aortitis two individuals had evidences of paralysis before death, and in these cases areas of brain softening were demonstrated. In seven cases of early aortitis only one died of cerebral softening.

Tabes complicates specific aortitis less often than it is complicated by the vascular lesion. In over ten fatal cases none gave during life any clinical evidence of tabes. It is of interest to note here, however, that the histological examination of the cord in one case revealed an early sclerosis of the posterior root fibres, the posterior tract of the cord not being affected. Stadler found clinically in 248 cases of aortic disease 6.2 per cent of these had tabes, and he further states that in his autopsy findings almost all cases of tabes showed syphilitic aortitis.

Aortitis is a frequent complication of general paresis. Gruber and Straub on the autopsy table have found that 71 per cent and 82 per cent, respectively, of their cases of general paresis showed evidence of luetic aortitis.

In over two-thirds of our cases there was no cardiac enlargement. This agrees with Grau's findings, but Gruber in a majority of his specimens reports a distinct hypertrophy of the heart. Some have stated that cardiac hypertrophy is associated with the aortic insufficiency,

but in some of our most marked cases of aortic disease we have found surprisingly small hearts. It seems, however, that cardiac hypertrophy is not associated with luetic aortitis, or any of its complications, but is a result, probably, of some type of nephritis.

To discuss technically the serology of syphilitic aortitis is not the scope of this paper, but rather to point out that in our hands, at least, a definite serological procedure is preferable to either the original method, or several popular modifications, in diagnosing syphilis of the aorta, and that a high percentage of positive reactions in individuals who give no clinical evidence of syphilis of the vascular system can be explained by luetic aortitis.

In this series a positive reaction means complete inhibition of hemolysis when the controls have hemolyzed, and at the end of twelve hours. The antigen employed is an alcoholic extract of guinea pig heart. One-tenth c.c. of complement and, at least, two units of amboceptor are used in the hemolytic system. Many of the sera were done with the other antigens; namely, alcoholic extract of syphilitic liver, acetone partition of calf's heart, cholesterinized alcoholic extract of human heart and guinea pig heart. But the findings with these various antigens were not as constant and as consistent as with the first-named extract. We do not mean to infer that these extracts are not to be used in the Wassermann reaction, but rather that in the serological diagnosis of syphilitic aortitis, the alcoholic extract of guinea pig heart should receive first consideration.

As stated, forty-two aortas have been examined and the sera of these cases tested serologically before death. Nineteen of these gave positive Wassermanns; twenty-three were negative. Of the nineteen positive cases, seventeen aortas gave microscopical evidence of luetic aortitis; namely, 90 per cent of our positive reaction (those sera fixing complement according to the method above described), have, at least, a definite pathological explanation based on changes in the aorta which are pathognomonic of syphilis. It is interesting to note that fifteen of the nineteen cases died as a result of a syphilitic process—about 80 per cent, while eleven of the nineteen died from their luetic aortitis—about 60 per cent. The four cases dying from syphilis other than aortitis were one case of syphilitic cerebral endarteritis; one of meningomyelitis; one of tabes and one of ulcerating gumma of the larynx. Of four cases with positive Wassermanns dying of non-syphilitic conditions, but showing perivascular infiltration, two died of carcinoma of the bronchus; one of chronic ulcerative tuberculosis, and one of interstitial nephritis.

Though the number of cases studied are too few to make any definite deduction, they are suggestive and worthy of thoughtful study.

From the above it is highly probable that about 90 per cent of individuals dying with a positive Wassermann, if the infection is not of recent origin, have, at least, from the histological point of view, luetic aortitis. That about 60 per cent of them die from their aortitis, giving clinical evidence of cardiac decompensation or rupture of an aneurism, and that about 80 per cent of these individuals die of syphilis. Since only one case of perivascular cellular infiltration gave a negative Wassermann in our series, it is fair to assume that 94 per cent of individuals suffering from luetic aortitis would give a positive reaction in their serum.

That our results correspond with the data in literature is shown by the recent works of Stadler and Gruber. Gruber obtained identical serological reactions in his series of luetic aortitis; namely, 94 per cent positive Wassermanns on post-mortem serum. Basing his results on the pathological findings, Stadler states that 82 per cent of 256 cases of syphilis had aortitis, and so considering a positive fixation as diagnostic of syphilis we find, as stated, that 90 per cent of the syphilitics have evidence of aortitis. Our higher figure could easily be accounted for by considering (as we did) every aorta with perivascular infiltration as specific. Though only 46 per cent of Stadler's cases died of their vascular lesion we, in our series, found that the aortic lesion accounted for deaths in 60 per cent.

The serology of aortic insufficiency is confusing. Serologists obtain positive reactions ranging anywhere from 50 to 80 per cent of the cases. The reason for this large discrepancy is due to the fact that the clinicians have failed to differentiate between the various types of this lesion. If one remembers that only pure aortic insufficiency, with the exception of an infectious endocarditis, is always syphilitic, and that the serology is positive in probably 100 per cent of the cases, and that the aortic lesion associated with a mitral incompetent valve is usually an atherosclerotic process (and only occasionally specific) you can readily understand the disagreement in the serological results.

The effect of treatment on the serology of luetic aortitis should receive passing notice. All the cases with varying amounts of treatment, including Salvarsan and mercury, with the exception of four, remained positive throughout.

It is important in serologically diagnosing luetic aortitis of repeating the reaction on sera, especially if any form of antisppecific treatment has been administered. Though in 75 per cent of the cases treatment did not alter the serological reaction in the blood, in 25 per cent it either weakened the reaction or produced a negative fixation.

As already stated, the antigen employed in reporting these reactions were alcoholic extract of guinea pig heart, though other antigens were used. The antigens made from syphilitic foetal

livers were unreliable with us, while acetone partition antigens, made according to Noguchi's method, though giving fairly good results were influenced earlier by treatment and the completed extracts seldom were of uniform strength. These antigens have been discarded by us in reporting the routine Wassermann reaction in the laboratory. It is important here to note, however, that Gruber, working with foetal syphilitic liver antigens obtained identical results with us. Our experience with the liver antigen (that it is so unreliable) is not surprising, since, though we attempted to obtain congenital luetic organs, in many instances we were not assured by spirochæta demonstration that our material was from a syphilitic infant. The highly sensitized cholesterin antigens we still employ with the assurance that complement fixation with this antigen probably does not always indicate the presence of syphilis. On the other hand, however, many other types of syphilis, as tabes, give only positive reactions with this antigen.

Though 90 per cent of our positive reactions with guinea pig heart antigen showed evidence of syphilis in the aorta, only 77 per cent of the positive results with cholesterin could be explained by similar luetic changes.

Finally, we hope these facts will be of assistance to the clinician in diagnosing syphilis of the aorta, and further, that it will emphasize the importance of a positive Wassermann reaction and make it incumbent upon all physicians to institute treatment as a prophylactic measure in such cases.

Syphilis is an endemic infectious disease which ranks with tuberculosis and carcinoma as a menace to the community, and which, when untreated, probably kills 80 per cent of its victims and produces in about 80 to 90 per cent an aortitis, of whom 50 or 60 per cent die of their vascular lesion.

## TREATMENT OF VAGINAL DISCHARGE.

By **GEORGE CHANDLER, M.D., F.A.C.S.,**  
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**T**HE causes of vaginal discharge, either acute or chronic, are so varied that to consider the subject in its entirety would occupy more time than is allowed me. I would present rather a simple resumé of the subject, laying special stress upon the particular points I have in mind as the object of this paper.

A general classification of the discharges found in the female genital passages is as follows:

*First.*—Normal vaginal discharge, characterized by white, creamy or curdy secretion, slight in amount.

*Second.*—Clear mucous or viscid discharge, similar to white of egg, normal to the cervical canal, which becomes mixed with the vaginal secretion and may or may not be abundant.

*Third.*—The purulent or muco-purulent discharge, commonly spoken of as leukorrhœa or whites.

*Fourth.*—Watery discharges.

*Fifth.*—Foetid discharges.

*Sixth.*—Bloody discharges other than menstruation.

*Seventh.*—Discharges of the mixed variety.

The normal vaginal secretion comes from the shedding of squamous epithelium, plus the exudation of some lymph serum, and is mixed with the normal viscid discharge of the cervix. It gives a strongly acid reaction which is due to the presence of lactic acid. In the virgin and in normal pregnancy the vaginal bacillus is regularly found. This bacillus causes the presence of the lactic acid in the vaginal secretion. In pregnancy the acidity is increased but, according to Bland-Sutton, ceases and remains absent for six weeks after normal labor. This acidity also disappears during and for a few days after menstruation, and in some pathological conditions the reaction may even become alkaline.

The normal cervical secretion is practically made up of mucous containing a few columnar cells from the cervix epithelium and from that lining the glands. It is tenacious.

The muco-purulent discharge is due to a change from the normal discharge by any cause whatsoever, modified by the presence of various pathogenic organisms, of which a great variety has been demonstrated.

Watery discharges are produced by a simple hyperemia, and are most frequently found accompanying cancer.

The foul discharges occur as a result of ulceration, sloughing from fibroids or polypi, retained pessaries, or retained products of conception and cancer.

Bloody discharges not normal, result from cancer, fibroids, endometritis, injuries, adenomatous disease of the cervix, tubal pregnancy and in hemophilia.

To cure a condition governed by causes such as those cited in the last three classes, it is obvious that the cause must be removed.

The class of discharge I wish particularly to discuss, is that characterized by its chronicity and known commonly as leukorrhœa or whites. This condition is a chronic or sub-acute catarrh of the cervix and vaginal mucous membrane. It is the result of a number of causes such as traumatism, irritation, or exposure, and is modified of course, by the various kind or kinds of micro-organisms which are brought to this mucous surface.

In this day of the laboratory, it is with some hesitancy that I offer a paper based entirely upon clinical facts but the treatment which I am

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 28, 1915.

going to describe will fit every chronic or sub-acute vaginal discharge, whatever the cause or micro-organism, so the laboratory examination is really superfluous, except for a positive diagnosis, which is, of course, satisfactory and scientific.

In a hospital, or with a private laboratory and corps of assistants, it is possible to examine each individual case to determine the kind of organism which produces the condition, and this should be done for the purpose of scientific investigation and statistics, but in the run of cases which present themselves in the average physician's office it is impractical.

When, by elimination, pyosalpinx, uterine fibroids, metritis, severe displacements, endometritis, injuries, ulcerations or other pathological conditions have been ruled out, we find a leukorrheal discharge which is so slow to yield to treatment that it brings the patient again and again to the office.

The treatment for this condition, outside of general tonic treatment, usually consists in giving the patient some kind of a douche containing carbolic acid, bichloride of mercury, lysol, etc., or a series of tampon treatments with boroglyceride, ichthyol or the like. As chief of the out-patient gynecological department of one of the large New York hospitals some years ago, and in similar work elsewhere, I have had considerable opportunity to try these various treatments, and in my own hands have found them, in the majority of cases, very unsatisfactory.

In consulting the later textbooks I find nothing new on the subject, but only the stereotyped treatment which has been in use for years and to which every author attributes but indifferent results. Except in the case of acute gonorrhoea, I therefor adopted a dry method of treating these discharges, and had such satisfactory results that I have made it a routine procedure.

With the patient in dorsal position on table or chair, with good light, a narrow long bivalve speculum is inserted and the vagina and cervix carefully wiped with cotton. If adenomatous disease of the cervix and granulations or retention cysts are present (and they usually are), I curette the granulations, incise the cysts and then treat the cervix as follows:

Pure carbolic acid on cotton about a probe is inserted in the cervical canal through its entire length, being careful not to enter the uterine cavity however.

The vagina is then painted in its entirety with a  $\frac{1}{2}$  per cent solution of tincture of iodine. The entire surface can be reached by turning the speculum about and painting the folds as they protrude between the blades. Immediately enough plain sterile gauze is packed all about the cervix and in the vagina, to fill it comfortably and far enough above the urethra to avoid soiling by the urine.

If the mucous membrane looks healthful, I

repeat this iodine and carbolic acid treatment three or four times, at intervals of forty-eight hours. After that I dust the vaginal surfaces with a powder composed of equal parts of boracic acid and stearate of zinc and then pack with dry sterile gauze. This procedure is repeated three or four times at forty-eight hour intervals like the other.

The gauze should never be left longer than forty-eight hours on account of fermentation and the attendant irritation to the mucous membrane, which would defeat the object of the treatment.

It sometimes happens where the mucous membrane is particularly sensitive, that on removal of the gauze after the first forty-eight hours, a number of slight excoriations will be found on the vaginal surface. In such cases, instead of going on with the iodine treatment, I use the zinc and boracic acid treatment the second time. In other words, I alternate the two treatments, always finishing with the zinc and boracic acid.

The patient is then told to come after her next menstrual period and report. This treatment should always be begun a few days after menstruation, so that there will be time for its completion between periods.

In the majority of cases, they return with the cheering news that the leukorrhoea has disappeared. Sometimes a couple of months later, I have had a patient return, saying that the discharge was reappearing. One treatment of carbolic acid and iodine, followed in forty-eight hours by the zinc and boracic acid as described, will usually be enough to complete the cure.

Clinically, I believe that as a cleansing media, water should be used as a douche, but no medication other than salt or bicarbonate soda should be allowed in it. Carbolic acid does not dissolve well and a rather concentrated solution will usually be the last to leave the douchebag, tending to aggravate the trouble.

During the last year I have treated a large number of such cases with surprisingly good results, and the fact that women are constantly presenting themselves at my office, saying they have been sent by those already benefited, leads me to believe that the treatment is worth presenting for your consideration.

This treatment is also efficacious in gonorrhoea of long standing. In acute vaginitis due to the presence of the gonococcus, the patient is put to bed and the vagina is packed lightly with sterile gauze in which the dry boracic acid powder has been incorporated. A urinary antiseptic, such as urotropin, is administered, light diet prescribed with plenty of fluids by mouth, the gauze is removed each day, and after the acute stages have subsided, the dry iodine treatment as before advocated is followed out.

In all chronic vaginal discharges local treatments must, of course, be supplemented with supportive treatment. Constipation must be cor-

rected by the establishment of habit and the use of mild laxatives. This is very important.

Where there is anæmia, small doses of iron long continued are more efficacious than the large doses we used to give.

The right kind of food, exercise, and later a change of climate are enjoined.

In gonorrhæal vaginitis of children the foregoing treatment is not indicated. Local treatment is of no avail in these cases, and the trouble is most successfully combatted by the use of vaccines, following the practice of B. W. Hamilton.

In conclusion let me say that I am firmly convinced that douches and the usual moist tampons *do not cure leukorrhæa*. While they have a tendency to alleviate for the time being, they certainly irritate and eventually provoke the very conditions we are trying to cure.

Why is it not rational to treat the vagina along the same advancing lines followed in modern surgery as shown in the care of wounds? The use of water is now practically eliminated from all inflamed surfaces. Wounds and cavities are kept dry and clean with possibly the use of a mild antiseptic. Following out this same line of treatment for vaginal discharge is only keeping pace with the advancement of surgery toward a scientific simplicity and a more perfect asepsis.

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### PANCREATIC CYSTS.\*

With Report of Two Cases.

By GEORGE B. BROAD, M.D.,

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**N**O organ has revealed more slowly its medical secrets than has the pancreas. But little was known of its function, and less of its pathology, prior to the nineteenth century. A firm foundation was laid in 1856 by Claude Bernard, who described the pancreatic ferments, while shortly after, Verchow, Orth, Langerhans and others established a basis for our present-day pancreatic diseases.

The surgery of the pancreas received its impetus after the publication in 1886 of the work of Nicholas Senn, the father of pancreatic surgery. Since Senn's paper, progress in the surgery of the pancreas has been comparatively rapid. The statement may be made, however, without fear of successful contradiction, that of all the abdominal organs the surgery of the pancreas is the least advanced. This is due in part to its location and partly to the fact that it seems less frequently than most other abdominal organs the seat of disease requiring surgical treatment.

My paper will deal only with one phase of surgery of this organ, viz., pancreatic cysts. Gussenbauer, in 1882, is reported to have been the first to operate successfully by laparotomy upon a pancreatic cyst. Other successful attempts were reported in 1861 and 1867. Two stage operations were reported in 1861. Important observations on cysts of the pancreas were made by Engel as far back as 1841.

Cysts of the pancreas, if recognized and operated, offer by far the best prognosis of any surgical condition encountered in pancreatic surgery. Cysts of the pancreas are not numerous, although some large groups have been collected. Korte reported in his work 121 cases. Ransohoff collected 159 cases, Robson and Cammidge report in their collection 160 cases.

I have reviewed in preparing this paper the record of 41 cases, which, so far as I know, have not been grouped in any other series. I have not attempted a tabulation of these cases, for in no sense do these exhaust the literature. Of these forty-one cases, four died. Three did not fully recover. One very interesting case is reported by Murray in *The Annals of Surgery* for April, 1911. The cyst was stitched to the abdominal wall. A sinus persisted for three years. A stone was located by X-ray in the tail of the pancreas. The patient refused operation for its removal.

But few have reported large individual series. Robson and Cammidge reported thirteen cases coming under their direct care. Dr. John B. Deaver reported eleven operations for pancreatic cysts. Most surgeons report one, two or three cases, as their experience with cysts of this organ. In a review of 6,000 autopsies in Guy's Hospital, Malcolm found reference to but four cases of pancreatic cyst.

Most authorities classify cysts of the pancreas into retention, proliferation, hemorrhagic, hydatid, congenital cystic disease and pseudo cysts. Time will not permit a discussion of the formation of the above cysts and the work that has been done to establish causative agencies. I may say that most observers think that a stone in the pancreatic duct can cause cysts of moderate size. Senn held that a calculus that partly obstructed the outflow of pancreatic juice would cause cyst formation in the same manner that a stone in the ureter would cause hydronephrosis. He also held that complete obstruction of the duct would lead to atrophy of the pancreas with but little cyst formation. Robson and Cammidge contend that there is always some pancreatitis in association with cysts of the pancreas. Most authorities concede this to be true. Whether cysts in certain cases precede the pancreatitis, or are a consequence, has not yet been fully determined. It is true that comparatively few cases of acute pancreatitis develop cysts.

\* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.



Pseudo cysts are more rapid in their development than other types, and are usually preceded by an injury. Pseudo pancreatic cysts are found more frequently in men. I was impressed with the number of children in whom pancreatic cysts were found. Four of the forty-one cases reviewed by me were in children under ten years of age. The youngest case was one of fourteen months, reported by Connolly in *The Lancet* for March, 25, 1911.

Prior to 1892, most collections of fluids in the lesser peritoneal cavity were supposed to be cysts of the pancreas. In that year Mr. Jordan Lloyd made an exhaustive study of collections of fluid in this cavity, and laid the foundation for a new classification. He reserved the term "pancreatic cysts," for cysts actually arising in that organ, classifying other collections in the lesser peritoneal cavity as pseudo pancreatic cysts, even though they secondarily involved the pancreas. The work of Lloyd tends to prove that by far the larger number of cysts of the lesser peritoneal cavity, not the result of injury, arise from the pancreas. Accumulations of fluid in this cavity which shortly follow a severe injury in the epigastrium, are usually pseudo cysts, and result from the injury sealing the foramen of Winslow, thus permitting the fluid to collect in the lesser cavity.

Organs other than the pancreas which have developed cysts presenting in the lesser cavity, are the suprarenal, a case of which has been reported by Treves, also cysts of the kidney, spleen and mesentery, all of which are rare.

There are no signs or symptoms which are absolutely pathognomonic of cysts in the pancreas. There are many cases reported where the cyst was found during routine examination, the patient having been unaware of its presence. In most cases, the patient is conscious of discomfort, some weight or fullness in the epigastrium. These sensations gradually increase. Later, pain may be experienced. Sometimes vomiting occurs, and becomes very distressing. These symptoms have been grouped together by Friedreich under the name of "coeliac neuralgia." From this beginning, a comparatively wide variety of symptoms may occur. Jaundice may be present, with light colored stools. If of long standing, there is usually the associated pancreatitis, with the imperfect digesting of fats and the underlying fat necrosis. Extreme emaciation is sometimes present. If the symptoms classed under "coeliac neuralgia" occur, and a tumor is found in the upper abdomen, a possible cyst of the pancreas may be suspected. If a mass appears in the upper abdomen a few days or weeks after an injury in this region, unless its association is proven with some definite structure or organ, a pseudo-pancreatic cyst should always be suspected. While most cases developing cysts of this

character receive injuries directly over the pancreas, this is not necessarily so, as exemplified in the case reported by Rufus B. Hall in the *New York Medical Journal*, February 11, 1911. A man while lifting a heavy weight felt something give in the upper abdomen. He developed a tumor in the epigastrium, came to operation late, and finally died. This mass proved to be a cyst of the pancreas.

After operation we are aided somewhat by the laboratory in separating true from false cysts. If all three pancreatic enzymes are found in the fluid of a cyst of the pancreas, it is presumptive evidence that the cyst had its origin in the pancreas. The absence of any or all of the enzymes in no way rules out the connection of the cyst with the pancreas. This was demonstrated in the case of Gussenbauer's, when the fluid from a fistula persisting from a pancreatic cyst was repeatedly examined for enzymes with negative results. On the death of the patient five months later, the origin of the cyst from the pancreas was established. These exceptions are explained on the ground of an associated pancreatitis, or in long standing cysts, the destruction of all pancreatic tissue in connection with cyst lining.

The fluid obtained from pancreatic cyst is alkaline, specific gravity, 1.010 to 1.020; albumen constantly present; cholesterin frequently present, mucus present occasionally. The presence of ferments varies. If present, they suggest a connection of cyst with the pancreas, but should be considered a link in a chain of evidence.

The two cases I wish to present have the following histories: *Case I.* Mrs. C. T., mulatto, age twenty-eight, married, no children. She has no fixed occupation, occasionally employed doing housework. For the past two years has been unable to work. In early girlhood she was not strong, though remembers no particular disease. Menstruation appeared about sixteen, always overdue. No history could be obtained of venereal disease. About two years ago she began to feel poorly. A cough appeared, which still persists; later, night sweats developed. No lesion of the lungs ever detected. Patient drifted along with but little change until a few months before she came to the hospital. She then noticed a swelling of the abdomen. Her general condition grew worse. Abdomen slowly distended, with but little local discomfort.

She was admitted to the Syracuse Hospital for Women and Children, December 19, 1912. She appeared anæmic; not greatly emaciated; eyes slightly jaundiced; examination of heart and lungs negative. There was marked distention of the upper abdomen, somewhat more on the right than on the left. This extended well down to the hypogastric region. Outline of the abdominal organs unsatisfactory;

some tympany in lower part of abdomen and in the sides. The liver could be outlined above and to the right of the mass. The mass gave the impression of an adherent cyst. Examination of pelvis negative. Patient complained of no pain, but said she had an uncomfortable sense of fullness, some morning nausea, no vomiting. The stools were white and pasty, at times contained blood. The examination of blood: reds, 2,500,000; whites, 13,400. Urine, pale and straw colored; specific gravity, 1.003; 1 per cent of albumin, no sugar, blood or casts, but some pus; the pus disappeared after four days. Specimen obtained by catheterizing ureter, which method was used to eliminate the connection of the kidney with the mass. In three days blood had risen to: reds, 2,850,000; whites, 16,250; hemoglobin, 85. Differential count: neutrophils, 64 per cent; small lymphocytes, 26 per cent; large lymphocytes, 8 per cent. Patient's temperature would range from 99 to 101.2 degrees. Pulse, from 100 to 128.

The abdomen was opened January 10, 1913, right rectus incision. The stomach was found pushed well up under the diaphragm. The transverse colon presented in the lower part of the incision, well below the umbilicus. Between these two viscera, covered by omentum, could be seen the cyst, dark in color. After walling off the rest of the abdominal cavity, the omentum was incised. About five pints of fluid of a greenish brown color was drained from the cyst, which was then freely opened. The inside of the cyst wall was smooth. The wall was very thick and firmly adherent to the posterior wall of the stomach and colon. A piece was removed for examination. A purse string suture was placed, and a drainage tube inserted. A second purse suture was placed, and the tube was pushed into the cyst cavity, inverting the edges after the manner of gall bladder drainage. The patient made a slow but uneventful recovery. Normal temperature after the tenth day. The tube was removed on the seventeenth day. The chemical examination taken from the fluid drained from the cyst failed to show the presence of enzymes. The pathological report of the portion of the cyst mass removed was "acute inflammatory tissue," no pancreatic tissue being found.

The patient was discharged from the hospital February 13, 1913, apparently well. Two months later I saw her, and so far as I could detect, the abdomen was normal. Attempts to locate her afterward failed.

*Case II.* Miss M. B., age twenty, telephone operator; was referred to me by Dr. Sullivan, of Baldwinsville, June 4, 1913. Early history unimportant. When in high school five years previously, would frequently be dizzy and faint before breakfast, with queer sensations in stomach. These gradually passed away, and she felt perfectly well until December,

1913. At this time patient was conscious of a sense of fullness in the upper abdomen. This sensation gradually increased, but at no time for the first five months was it severe enough to interfere with her work. About one week prior to her admission to the hospital, she became very much worse. Pressure of her hand or clothing over the upper abdomen would cause pain. She could walk but a short distance without resting. The afternoon of the day before her admission, she was taken with severe constant pain in the abdomen, more particularly on the right side. She continued her work until nine in the evening. The pain persisted throughout the night. In the morning she was admitted to the hospital.

*Examination* revealed a rigid right side of the abdomen, with a mass the size of a foetal head presenting to the right of the umbilicus. Patient's temperature was 99.8; pulse, 88. Mass was very tender on pressure. There was dullness over the mass, but around it an area of tympany. The liver could be palpated above and to the right. There was no movement of the mass on respiratory excursion. Blood count showed leucocytes, 12,900; 72 per cent polymorphonuclears. Urine negative. All other examination of chest and abdomen negative. A diagnosis was made of omental or pancreatic cyst; operation advised.

At two o'clock in the afternoon of the same day the operation was performed. A right rectus incision was made. On entering the abdominal cavity the mass presented between the stomach and transverse colon, pushing the gastrocolic omentum forward. Before disturbing the mass, the rest of the abdomen and pelvis was explored with the hand. All the organs appeared normal. The abdominal cavity was walled off with gauze and the gastrocolic omentum opened. This exposed the cyst wall. An attempt was made to aspirate the fluid, which in part only was successful. After sufficient tension had been relieved to permit, the cyst wall was opened and drained with gauze sponges. The fluid was thick, viscid and somewhat colored. The examining hand could detect several pockets or compartments. The inside was not smooth as in the previous case, but attached to the cyst lining were several masses which with a little effort could be detached. I made the attempt to see what could be accomplished in the way of enucleation, but the cyst wall was closely adherent to the posterior wall of the stomach. A portion of the cyst was removed, as well as part of the irregular masses which lined the cavity. The cavity was drained as in the previous case, enough of the cyst wall having been dissected to permit the use of the purse-string method. The patient had no trouble following the operation, and made an uneventful convalescence. Normal temperature after the third day. The tube was removed on the

twelfth day, and the wound entirely closed on the twenty-fifth day. Chemical examination of the fluid revealed no enzymes. Pathological examination of the tissue from cyst wall reported "simple inflammation without evidence of malignancy." The masses attached to the lining of the cyst were organized blood clots. Some clots were also taken from the fluid.

I have examined this patient within the past three weeks, and she is free from any evidence of trouble. She has returned to her work and feels absolutely well.

These are the only cases I have seen of cysts or pseudo-cysts of the pancreas. In a few particulars only do the cases above reported fail to follow the rule for cysts of this organ. Cysts of the pancreas are more often found on the left side of the abdomen, appearing in the left part of the epigastric and left hypochondriac regions, and if at all large, extending down into the left lumbar region. The reason for this is the greater tendency for the tail of the pancreas to undergo cystic degeneration. Cysts of the pancreas appear in an inverse ratio as the head of this organ is approached. Both of my cases had cysts presenting on the right side of the abdomen.

Hemorrhage in cysts of the pancreas is very common, and, no doubt, explains the color of the cyst content in both of my cases.

The basis of my claim for classifying the first case as a cyst of the pancreas is by elimination. The cyst was in contact with or a part of the pancreas. There was evidence of disturbed pancreatic function. It also corresponds to the symptom complex of pancreatic cyst reported by other observers in every essential particular. The diagnosis for my second case is based upon excluding by examination every other abdominal organ from which cysts usually arise. The symptoms and physical findings in this case all confirm the diagnosis. Any attempt to prove by dissection the origin of these cysts would have been absolutely unwarranted, and in my opinion would have resulted fatally.

Korte has made three classifications of the pancreatic cysts, according to the direction the growth takes. The first group comprised those tumors which present between the stomach and the transverse colon. Cysts appearing at this point usually arise from the anterior part of the head or body of the pancreas. Pseudo-cysts would also appear at this place. The second group comprises those cysts which appear above the lesser curvatures of the stomach. This may be determined somewhat by the presence of a gastroptosis in the patient afflicted with this trouble. The third group comprises those largely which arise from the tail of the pancreas. These cysts arise from the left of the duodenal jejunal junction and grow into the transverse mesocolon. They

may then appear above, below or behind the colon.

Operation is the only safe treatment for cysts of the pancreas. If the cyst has reached any considerable size, drainage without removal is usually all that is necessary. The mortality by this method is low. The forty-one cases reviewed by me with four deaths give a mortality of 9-7/10 per cent. Robson and Moynihan report eighty-four cases with five deaths, a mortality percentage of not quite 6 per cent.

Extirpation of the cyst is only to be attempted if the cyst is small and can be easily removed. The same authorities review fifteen cases of complete excision with thirteen recoveries, a mortality of 13 1/3. Seven attempts at removal in cases not suitable for excision are reported, with four deaths, a mortality of 57 per cent.

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### FOREIGN BODIES LEFT IN THE ABDOMEN AND IN SURGICAL WOUNDS.\*

By MATTHEW D. MANN, A.M., M.D., F.A.C.S.,

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**M**OST of us have read Mr. Dooley's description of his experiences after an appendectomy operation. How after recovery he heard a strange rattling in his abdomen when walking, and how the surgeon finally extracted various instruments, including the nurse's curling tongs, various hairpins, bracelets, etc., left at the time of the operation. Unfortunately, there is more truth than fiction in the story. Nevertheless, there really is a comical side to the thing, as shown by the case where a woman was operated on in America, in Germany and, finally, in France—the last operator finding a pair of spectacles!

Query: Who was most to blame? Evidently the German, for if he did not lose the spectacles himself he should have found them. How anybody could drop off his spectacles into the abdomen without knowing it, is hard to understand.

Another funny case is that of a foreign operator (I will not mention his nationality, as I want to appear neutral) who in fear of such an accident, attached a long tape to his gauze pad, and then a hemostat to that, and ended by sewing in the whole thing.

There have been a large number of cases reported from all parts of the world. From inquiries among some of my surgical friends, I do not believe a single surgeon of large practice in this city has escaped this accident. To some it has happened several times, so that I think that at least twenty-five such cases have occurred in Buffalo alone. From this it could be easily estimated how many there have been in the country at large. It would certainly mount into the hun-

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dreds. Possibly this number could be increased by supposing that many cases have happened of which nothing was known, or even suspected—the grave covering the accident.

Fortunately, not many fatalities have been reported, but much suffering has certainly resulted and no end of anxiety and worry has come to the surgeon, besides heavy damages after very costly law suits. I know of one now before the courts. This particular case looks like attempted blackmail.

Most of these accidents have occurred in operation on the abdomen. Every one who has seen an abdominal operation must recognize the ease with which a sponge, a piece of gauze or a small instrument may be lost among the intestines. Doubtless every abdominal surgeon has sometime or other hunted long and faithfully before he has found a sponge, which he knew to be there. Still, it must not be forgotten that this accident may happen in operations other than laparotomies. I know of a case in which a piece of gauze was left in the axilla in a breast case, and I remember a case which occurred many years ago, where a sponge tent was forgotten and left in a sinus near the knee joint by one of the most distinguished surgeons in New York City. A case has also been reported where a sponge was left after a hernia operation.

Gauze packing has repeatedly been left in the uterus after currettement. Fortunately, the uterus usually expels it, but not always, and there have been some law suits on this ground.

Where a foreign body is left in the abdomen, three very serious results may follow. First and most important, is the death of the patient. Second, long continued suffering, generally followed by the formation of an abscess, with almost always recovery. Thirdly, legal complications, which have always been disastrous to the surgeon, even though he eventually succeeded in successfully defending himself.

It is not now my intention to discuss the fatal cases or the legal aspects of such accidents, but rather to discuss how the accident may be avoided. There is no sure mechanical way. All the various contrivances only tend to lessen the danger or, more properly, to render avoidance easier. They do not prevent. All kinds of pads, sponges, gauzes and towels have been left in the abdomen. The best, in fact the only method, is to have a certain definite number of sponges or pads carefully counted before the operation, and equally carefully counted and the count controlled before the wound is closed. The same rule holds good as regards hemostats and other small instruments. It is a good rule never to put short hemostats or other small instruments into the abdomen.

A good plan is to have large gauze pads for use in the abdomen put up in packages of, say one dozen. They must be carefully counted by the nurse who puts them up, and the count

controlled by someone else. This plan has not always been successful, nevertheless it is good. Wylie reported a case where an assistant in the country at a private house had carried three pads with him, and, without the knowledge of the surgeon, had used these pads and left them in the abdomen. Of course the count was apparently correct. Such a thing could not happen in a well organized hospital clinic. Under no circumstances should small loose gauze pads be used in abdominal work. Anyone who does this may escape for a time, but is pretty certain to come to grief in the end.

Putting long tapes on the pads has been advised, but one case, already alluded to, has been reported where pad, tape and a hemostat attached to the tape were all sewed in. Coe reports three gauze pads with tapes at autopsy, when the tapes were found wrapped around the intestines.

A roll of gauze six inches wide and two yards long is often used. It is a good plan, and makes accident very unlikely, but I know of a case in this city where such a long roll was used to pack the pelvic cavity and forgotten. Boldt had a case in which an operating room towel used in an emergency to hold back the intestines, was left. The count of pads was of course all right. This case was for seven years in the courts.

For some reason, unknown to me, marine sponges have been almost entirely given up. As far as I can see, there is no good reason for this. Undoubtedly, fashion and prejudice have much to do with it. In my own practice I have never discarded them, especially in abdominal work. One reason which is urged against them is the difficulty of sterilizing them. Here the conclusion has been arrived at without good grounds. It is just as easy to sterilize a marine sponge as it is to prepare and sterilize a gauze pad or a gauze roll. The cost on the whole is less, and the trouble no greater, if as great. Marine sponges have two advantages. They are much better absorbents than gauze, and as only a small definite number are used, it is much easier to keep track of them during an operation.

I firmly believe that if marine sponges had not been so largely given up, there would not have been nearly so many cases of sponges (gauze) left in wounds. I have mentioned this matter to a number of surgeons. They always meet me with an incredulous stare—as much as to say, are you so old-fashioned as that? But when I pin them down they are forced to confess that there really is no good reason why marine sponges should not be used.

Let us consider the matter more at length. First, as to sterilization of marine sponges. The sponge is only the skeleton or frame-work of the animal. The soft parts are left to rot away, so that a new sponge, before it has been cleaned, is full of all uncleanness. As they come in the market, they have usually been bleached, which

means sulfurous acid or chlorine, both of which are antiseptics, chlorine a very powerful one. So that, as we buy them, they are not dirty. Still they must, of course, be carefully sterilized.

The method I have used for twenty-five years is simply this. New sponges are beaten, and then washed and squeezed in plain water to get out the sand. Afterwards they are put into strong hot soapsuds made with a powdered soap. The powdered soaps are much more strongly alkaline than bar soap, which is an advantage, and a suds is much more quickly made. They are left in this soapsuds, which in itself is antiseptic, for 48 hours. This dissolves out all blood, pus or other organic matter. They are then put into a pail, and fresh water from the tap is allowed to run on them for 24 hours, or until all traces of the soap are removed. After this they are squeezed dry and put into a 1 to 20 solution of carbolic acid. They must be kept in this solution for 48 hours, and may be left in until used, or they can be dried in cotton bags and kept dry. If the surgeon is doing much work, it will be necessary to have a number of sets, so as always to have enough ready for use.

Careful laboratory tests have shown that when prepared in this way the sponges are perfectly sterile, and never in over 4,000 laparotomies in which I have employed them, have I seen an infection which could in any way be traced to their use.

I use the same sponges over and over again—even when infected, I never throw them away. I have had such sponges tested in the laboratory before and after cleaning, and found that, though full of germs before, after the carbolic acid bath they were absolutely sterile. I use always one dozen sponges at each laparotomy—nine round and three large flat. They are carefully counted beforehand by two persons and counted again before the operation is finished.

The method of counting is of importance, and this applies to any kind of sponge or pad. The sponges are all placed in a dry basin, and are then counted as they are taken out, one by one, and put into another basin. The count is made out loud, so that the operator can hear it. Never but once, so far as I know, did I sew up an abdomen with a sponge in it. This was a case of colloid cancer operated on about ten years ago, in which the abdomen was enormously distended and filled with quantities of glue-like material. A very large flat marine sponge was overlooked in our hurry, as the patient was getting weak, and we were afraid she would die on the table.

The error was discovered almost as soon as the patient was in bed, but, owing to the severe shock, it was not deemed advisable to disturb her then, but to wait until reaction had taken place. The next morning she was all right, and I took out a few stitches under a little ether and removed the sponge. The patient recovered and lived some time.

In another case, twenty years ago, I left in a hemostat. I removed it two hours later, and came near leaving in a small sponge at that time. Had it been gauze, I certainly should have left it. If I have had any other cases, I do not know it.

The small number of sponges employed, and the consequent ease of keeping track of them is the great advantage I claim for sea sponges. With a reasonable amount of care with these sponges, it is impossible for an accident to happen.

I may perhaps be laughed at as old-fashioned and behind the times; but results are what we are all after, and I claim mine, in this respect, are about as good as any others. If I can be shown that sea sponges have ever done any harm, then I will at once give them up.

One reason perhaps why marine sponges have been given up is the difficulty of getting the proper kind. Good round sponges cannot be gotten in Buffalo, and I am obliged to go to New York to the large dealers to get the right kind. I buy round sponges by the box or half-box, at 15 cents apiece. About one-third of them are too soft, but this does not make a prohibitory price. The flat sponges are more expensive. I never use a sponge after it gets so that it will tear easily. Nurses are not allowed to wring the sponges, but only to squeeze them with gloved hands.

As to instruments, only the greatest care will prevent accident. They should be carefully counted before and after use, and only long-handled instruments used in the abdomen.

To conclude, I wish to impress it upon you that nothing but eternal vigilance will prevent this accident, and it will sometimes happen in spite of one's best efforts. Its possibility should be ever in the minds of every operator, and no one should be blamed if after taking reasonable care the accident happens in his practice.

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#### CONCERNING MOUTH INFECTIONS AS RELATED TO SYSTEMIC DISEASE.\*†

By S. MARX WHITE, B.S., M.D.  
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THE systematic work of the medical clinic in this field began two years ago with the appointment of Dr. Thomas B. Hartzell as Research Professor of Mouth Infections in the Medical School, and the work has been a co-

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† The Experience of the Medical Clinic (Dr. Chas. Lyman Greene, Chief of the Department of Medicine), University of Minnesota.

operative one. All patients, when assigned to the medical clinic, have a preliminary examination of the mouth by the interne to determine gross evidences of alveolar or dental infection. All patients giving such evidences, together with all patients in which the presence of some focus of infection is suspected, are referred for study and relief of the mouth conditions to the dental service.

This service consists of Dr. Hartzell and his associates, and the research work of the service is supported in part by certain specific funds set aside by the National Dental Association. Hartzell, Henrici and Leonard have already reported to this Association<sup>1</sup> and presented other communications<sup>2</sup> on this work. I shall refer from time to time to these communications.

The aspect of this work, to which I wish to call particular attention, relates to the class of cases in our medical wards in which evidences of mouth infection related to systemic disease are found and to the results obtained by a systematic search for and eradication of such dental and parodontal foci.

The communications of William Hunter,<sup>3,4</sup> from 1900-1904, appear to have been the first ones to which serious and widespread attention were paid by the medical profession, and our present awakening to the importance of this subject has served to modify only in certain details, but not in the essential principle, the ideas presented in his discussion on oral sepsis as a cause of disease in relation to general medicine. However, those who attempted to follow his argument and repeat his experience at that time met with serious difficulties and many failures, and his conclusions did not for some time appear to be widely confirmed.

In recent years renewed interest has been aroused by the discovery of methods which reveal the presence of alveolar abscesses with an ease and directness previously impossible. Radiographic plates can be used to record the varying densities in the alveolar processes and give clear evidence as to the condition of the tooth, the presence or absence of a filling material in the dental pulp cavity, and changes occurring in the bone about the teeth. By this means alveolar abscesses have been found in patients in whom such changes were not suspected nor could they be demonstrated readily by earlier methods. It is remarkable how free from local symptoms and signs the blind alveolar abscess may be. Röntgenographic studies of the jaws have been increasingly made in recent years and have revealed alveolar abscesses in a very large number of patients. Ul-

rich<sup>5</sup> records the observation of 387 cases whose röntgenographic films of the jaws were available. He states that by a conservative interpretation 736 root abscesses were seen. These were commonly multiple in any given case; 806 artificially devitalized teeth were present, and of these 545 had blind abscesses at the tip of the roots; 191 abscesses were present on teeth devitalized either by accident or pulp destruction by caries. This observation as to the frequency and multiplicity of alveolar abscess is of extreme importance and has been borne out in the main by the experience of the dental staff in our clinic, the statistical results of which will be published by Dr. Hartzell and his co-workers.

The existence of this condition and the relative ease with which the facts can be obtained has given a tremendous impetus to the study of mouth infections within the past two or three years.

Billings<sup>6</sup> and Rosenow<sup>7</sup> have stimulated the study of such infections as related to general disease. The latter particularly, by his brilliant work in growing organisms by his special methods, from exudates and from tissues, has attracted much attention to the subject.

The study of focal infections in the mouth is only a part of the study of focal infections in general. Experience has shown that the principal sites in which chronic foci may be found are as follows:

1. The accessory nasal cavities, *e. g.*, ethmoid, sphenoid, frontal and maxillary.
2. The middle ear and mastoid antrum.
3. The tonsils.
4. The alveolar processes, including all forms of dental and parodontal infections.
5. The genito-urinary tract, chiefly the prostate and seminal vesicles in the male, and uterine adnexa in the female.
6. Gastro-intestinal tract, including the gall bladder, and the appendix.

Of these the accessory nasal sinuses are important, but at the present time little evidence is at hand to convict them of being the source of systemic dissemination. By this I do not mean that such dissemination has not been shown to occur, but that in our experience it is relatively infrequent.

The middle ear and mastoid antrum give prompt evidence of infection and are attacked radically and early by the surgeon.

The relation of the tonsils to the dissemination of septic infection has been increasingly recognized during the past decade and the work of Poynton and Payne and others is well known. Few clinicians at this time deny that infected tonsils are a source though not necessarily the only source of rheumatic fever, and of many of the so-called complications which are really only non-arthritis localizations, such as endo-

<sup>1</sup> (Report of the Mouth Infection Research Corps of the National Dental Association), *Official Bulletin of the National Dental Association*, October, 1914.

<sup>2</sup> (Metastatic Streptococcal Infections Arising from Primary Infections in the Neighborhood of the Human Teeth, read before the Philadelphia Academy of Stomatology, November 24, 1914.)

<sup>3</sup> *British Med. Jour.*, July, 1900, and

<sup>4</sup> *British Med. Jour.*, November 19, 1904.

<sup>5</sup> (Streptococciosis, read before the Minnesota Academy of Medicine, January, 1915, unpublished.)

<sup>6</sup> *Journ. A. M. A.*, LXIII, No. 23, December 5, 1914.

<sup>7</sup> *Journ. A. M. A.*, LXIII, No. 23, December 5, 1914.

carditis, myocarditis, pericarditis, pleuritis, chorea and myositis, including polymyositis. It is, however, to the fourth group given above, *i. e.*, the alveolar processes, including all forms of dental and paradental infections, that we are paying particular attention at the present moment.

Infection in this region may be roughly divided into two groups: (1) infections about the teeth, giving the so-called pyorrhœa pocket, and (2) abscesses and necrosis in the jaw, usually at the tips of roots, with or without sinus formation. The importance of these two groups appears to be almost equal. The recent finding of endamebæ by Smith and Barrett<sup>8</sup> in pyorrhœa, confirmed by other writers, gives a new aspect to this group. The discovery in emetin of a specific remedy against these parasites gives an opportunity to determine promptly whether or not the endameba is pathogenic and whether distant effects can be produced by it. The studies in our clinics and elsewhere do not appear to me to be conclusive as yet, and much time will be required before definite conclusions can be reached. Concerning alveolar abscesses, however, considerable information is at hand.

Gilmer and Moody<sup>9</sup> found the predominating organisms to be a streptococcus, both *viridans* and *hemolyticus* being noted. *Bacillus fusiformis* was also reported by them, together with other organisms, such as *staphylococcus aureus* or *albus*, *micrococcus catarrhalis*, and in two instances *diphtheroid bacilli*.

Billings<sup>10</sup> says: "The streptococcus-pneumococcus group apparently comprise the important pathogenic bacteria related to systemic disease."

Hartzell and Henrici, working in the clinic and laboratories of the University of Minnesota, under the auspices and with funds provided by the Research Commission and Science Foundation of the National Dental Association, have attempted to explain the relationship between the dental abscesses and multiple joint infections by the methods of experimental bacteriology.<sup>11</sup>

Cultures were taken from a number of cases of pyorrhœa alveolaris and of dental abscess, particularly from patients suffering from acute or chronic rheumatism. Henrici isolated and classified the streptococci from pyorrhœa and alveolar abscesses according to their cultural reactions; determined their pathogenity by animal inoculation; and in many cases prepared vaccines for treatment of patients. They state: "In the bacteriologic technic employed, our attention was directed solely to the streptococci. There were two reasons for this: first, streptococci were constantly present, and especially in apical

abscesses were frequently the sole cultivable organism. Second, our immediate problem being the relationship of dental infections to rheumatism, it was thought that a study of the streptococci would be most likely to yield tangible results. Other organisms, however, were frequently noted, such as the *staphylococcus albus*, the *bacillus coli*, *bacillus proteus*, various spore-bearing aerobes of the *bacillus subtilis* type, and *bacillus pyocyaneus*. One recent case yielded a pure culture of the *bacillus fecalis alkaligenes*. Only once was the pneumococcus obtained. Cultures have been taken from 162 cases, and in 150 of these streptococci were obtained. In seven cases where healthy teeth were extracted, using the same technic, we obtained sterile cultures."

A glance at Henrici's tables will show that the streptococcus *viridans* was found almost exclusively. Animal inoculations made it evident that the organisms were of low virulence, but lesions developed in rabbits inoculated, as follows:

|                         |   |
|-------------------------|---|
| Heart lesion . . . . .  | 5 |
| Kidney lesion . . . . . | 7 |
| Aortic lesion . . . . . | 3 |
| Joint lesion . . . . .  | 2 |

of twenty-four rabbits injected. The details of this cultural and animal work appear in Hartzell and Henrici's paper, but particular significance is attached to the association of heart, kidney and arterial disease in these rabbits.

Ulrich<sup>12</sup> reports thirty cases of apical abscess, in all of which streptococci were found. He says: "I have purposely refrained from naming the type of streptococcus found in these abscesses. Henrici finds invariably the streptococcus *viridans*. In my own experience I have noticed early cultures show green on human blood agar, but sub-cultures on identical media very often grow haemolytic and subsequent cultures may grow less and less haemolytic. Occasionally streptococci without color or haemolysis were found."

On account of the great prevalence of streptococci in these focal lesions, Ulrich suggests the term "Streptococciosis" to cover the class of cases in which streptococci are found in focal lesions and disseminated to other tissues.

I have reviewed the experience in our Medical Clinic from October 1, 1913 to January 1, 1915, with the purpose of showing the class of cases in which dental and paradental infections are found with evident relationship to systemic disease. I am not attempting to review here all hospital cases in which evidences of mouth sepsis were found.

The admissions to the medical service for the period covered were 565. Of these 55, or 9.7 per cent of the entire admissions had pyorrhœa

<sup>8</sup> Barrett, M. F., The Protozoa of the Mouth in Relation to Pyorrhœa Alveolaris. *Dental Cosmos*, August, 1914.

<sup>9</sup> A Study of the Bacteriology of Alveolar Abscess and Infected Root Canals, *Journ. A. M. A.*, LXIII, No. 23, December 5, 1914.

<sup>10</sup> Mouth Infections as a Source of Systemic Disease, *ibid.*, LXIII, No. 23, December 5, 1914.

<sup>11</sup> Hartzell and Henrici, A Study of Streptococci from Pyorrhœa Alveolaris and from Apical Abscesses, *Journ. A. M. A.*, LXIV, No. 13, March 27, 1915.

<sup>12</sup> Streptococciosis, read before the Minnesota Academy of Medicine, January, 1915, unpublished.

or alveolar abscesses or both, and have been included as instances of mouth sepsis, with evident or probable relationship to systemic diseases. These cases have been tabulated.

| Hospital No.     | Age | Tonsillitis | Pyorrhœa | Alveolar Abscess | Chronic Arthritis | Acute Rheumatism | Endocarditis | Nephritis | Athero-sclerosis | Peptic Ulcer        | Anemia, Secondary Type | Anemia, Pernicious Type | Vaccine |
|------------------|-----|-------------|----------|------------------|-------------------|------------------|--------------|-----------|------------------|---------------------|------------------------|-------------------------|---------|
| A. P. 1032, 2806 | 21  |             |          | *                | *                 |                  |              |           |                  |                     |                        |                         | *       |
| Mrs. K. S.       | 53  |             |          | *                | *                 |                  | *            |           |                  |                     |                        |                         | *       |
| Mrs. M. B.       | 33  |             | *        | *                | *                 |                  | *            |           |                  |                     |                        |                         | *       |
| J. K.            | 73  | *           | *        | *                | *                 |                  |              | *         | *                |                     |                        |                         | *       |
| J. N. S.         | 39  | *           | *        | *                | *                 |                  |              |           |                  |                     | *                      |                         | *       |
| T. G.            | 29  |             | *        | *                | *                 |                  | *            |           |                  |                     | *                      |                         | *       |
| Mrs. L. P.       | 40  |             | *        | *                | *                 |                  | *            |           |                  |                     |                        |                         | *       |
| Mrs. P. W.       | 38  |             | *        | *                | *                 |                  |              |           |                  | Exophthalmic goitre |                        |                         | *       |
| N. M.            | 44  |             | *        | *                | *                 |                  | *            |           |                  |                     |                        |                         | *       |
| E. R.            | 54  |             | *        | *                | *                 |                  |              | *         | *                |                     |                        |                         | *       |
| Mrs. L. F.       | 54  | *           | *        | *                | *                 |                  |              |           |                  |                     |                        |                         | *       |
| Mrs. L. E.       | 38  | *           | *        | *                | *                 |                  |              |           |                  |                     |                        |                         | *       |
| Mrs. C. E. W.    | 55  | *           | *        | *                | *                 |                  | *            |           |                  |                     | *                      |                         | *       |
| A. P.            | 29  | *           | *        | *                | *                 |                  |              |           |                  |                     | *                      |                         | *       |
| Mrs. I. P.       | 33  |             | *        | *                | *                 |                  | *            |           |                  |                     |                        |                         | *       |
| Mrs. A. O.       | 53  |             | *        | *                | *                 |                  | *            |           |                  |                     |                        |                         | *       |

#### NOTES ON CASES IN TABLE I.

A. P., Hospital No. 1032 and No. 2806. Age 21, male, white.

Clinical diagnosis:

1. Chronic tonsillitis.
2. Alveolar abscesses.
3. Chronic polyarthritis, with recurring subacute attacks.

Streptococcus hemolyticus culture from alveolar abscesses, vaccine prepared from this. Use of vaccine followed by increase in joint soreness lasting 3 to 4 days. Improvement of general and joint symptoms. Last dose of vaccine administered January 31, 1914. Very marked improvement with great increase in joint movement and freedom from pain, except on extreme exertion. Details of this case in official Bulletin of the National Dental Association, March, 1914.

Mrs. K. S., Hospital No. 3077. Age 53, housewife. Admitted June 19, 1913. Weight 130 pounds seven years ago; average 110; present weight 90.

Began to have "rheumatism" in toes and ankles 17 years ago. Affected joints have become swollen and painful. Between attacks improved but never got entirely well. During the years that followed always had pain in joints. Some of fingers and toes have become ankylosed.

Knees and elbows involved 15 years ago; since then elbows have become ankylosed. Severest symptoms in both knees 4 years ago. Became so painful that they could not be used and became gradually fixed. Has not been able to work for 18 months. Attempts to move joints cause intense pain and spontaneous pain, especially at night.

Four years ago began to notice weakness and shortness of breath, the latter becoming less marked after walking became impossible.

On admission she had severe pain in knees on attempting to move. Pain in hands, wrists, elbows, feet and ankles on any attempt to move. Is worse in the morning.

Examination shows marked emaciation and bony deformity. Moderate fixation of spine; pyorrhœa and dental abscesses.

Extracted all infected teeth. Made streptococcus vaccine from cultures and administered. An intercurrent attack of erysipelas occurred.

Notes show reaction about joints following injection of vaccine. In about 48 hours these reactions would subside. January 27, 1914, general condition about the same. Stiffness in elbows and wrists still exist. Finger joints more flexible than prior to vaccine. Improvement sufficient to give use of joints. Some redness and soreness of second phalangeal joint of second finger, right hand.

Patient had to be encouraged to get about and use limbs, emphasis being placed on effect of vaccine in limbering up joints. Has been able to support herself by using lower limbs to get about for a few feet. Ankle joints and metatarsal joints in both feet have not been ankylosed at any time and are now freely movable. Any joints which were almost entirely ankylosed have not improved.

Discharged February 21, 1914.

Mrs. M. B., Hospital No. 3732. Age 33, female, white, American, admitted October 30, 1913.

Diagnosis:

1. Arthritis deformans (periarticular).
2. Mitral insufficiency and stenosis.
3. Anemia, (secondary type).
4. General visceroptosis.
5. Laceration and erosion of cervix.
6. Retroversion of uterus.
7. Chronic parametritis.
8. Seborrhœa (oleosa corpora).
9. Acne vulgaris.
10. Pyorrhœa alveolaris.
11. Peridental abscesses.

November 9. One tooth extracted yesterday. Today complains of increased soreness and stiffness in all joints of hands and feet. November 11. Extracted; mesial root of lower left 1st molar-abscess; treated 7 and 8 lower right for pyorrhœa, which was not deep at any point, but general about teeth. November 15, extracted; mesial root and socket lower left, first molar, abscessed. Took cultures.—Dr. Leonard.

December 18. Administered 20,000,000 streptococci vaccine. Reaction. Soreness and stiffness in joints of knee.

December 23. Recovered from vaccine and feels fair—as well as at any time since admission.

December 30.—Better than at any time since arrival. Wrist joints, which were immovable, are now freely movable. Tension in skin over joints of fingers, but otherwise better. The vaccines increased the soreness, stiffness and tension about the joints for two or three days; the fingers becoming quite blue and swollen, and she feels as if she had a little fever.

January 8, 1914. Joints much better. Little reaction from vaccine.—Dr. Leonard.

January 23. Patient says there has been improvement in her condition following local injection of vaccine, and she can walk with comfort instead of extreme pain as before treatment.

Laboratory report shows streptococci from dental abscesses.

More detailed report on this case in Bulletin of National Dental Association, March, 1914.



J. A. K., Hospital No. 4076. Age 73, male, white, teamster, admitted January 13, 1914.

Diagnosis:

1. Chronic tonsillitis.
2. Pyorrhœa alveolaris.
3. General adenopathy.
4. Arteriosclerosis.
5. Atheroma of aorta.
6. Hypertrophy and slight dilation of heart.
7. Mitral regurgitation.
8. Arthritis deformans.
9. Talipes valgus.
10. Bunions.

Following are notes on dental condition: January 22. Upper teeth to be extracted; considerable pyorrhœa; no abscesses. February 3. Extracted lower incisors to get culture for vaccine. February 13. Extracted three anterior upper teeth to get vaccine, the one before having died out. February 19. Scraped lower teeth. February 26. Extracted lower right 8th,—only remaining dead tooth so far as could be seen. Scraped upper remaining teeth. Patient already showing improvement. March 12. Patient looks much improved. Gums almost healthy. He reports that he feels stronger.—Dr. Leonard.

March 23. Patient shows marked periarticular thickening across the carpal bones and including the wrist; metacarpo-phalangeal joints enlarged. Left wrist same condition, less marked than right with slightly more motion in left phalangeal joints. There is some grating in both joints (wrists) and in metacarpo-phalangeal joints. Skin dry, glistening, atrophic. Percussion note over chest is normal.

March 27. Four hours after injection of vaccine felt hot and nervous. This lasted three hours and disappeared. No other symptoms noted.—H. W. W.

March 29. Moderate amount of fluid is present in both knees.—H. W. W.

March 30. Effusion both knees. Right 37.5 cm. in circumference across patella; left 36.5. There is edema of both feet and ankles. There is marked deformity of toes, particularly of left foot. Large toe is markedly extended. Right foot and toes are not so deformed; no loss of motion in ankles, but some pain on pressure.

Discharged May 12, 1914, unimproved.

J. N. S., Hospital No. 3937. Age 39. Admitted December 15, 1913.

Diagnosis:

1. Chronic tonsillitis.
2. Pyorrhœa alveolaris.
3. Alveolar abscesses.
4. Chronic polyarthritis.
5. Anemia (secondary type).

Arthritis involved\* knees and right elbow. Effusion into both knee joints. Marked limitation of motion in elbow. Extraction of all teeth giving radiographic evidences of abscesses. Many teeth involved.

Autogenous streptococcus viridans vaccine given. After use of vaccine would have considerable pain in region of joints and felt sick generally. Reaction completed in 48-72 hours after injection, and after fourth and fifth injections, distinct improvement noted in symptoms and patient able to walk about with less pain and more comfort than he had had for two months. Small amount of exudate persists in knees.

April 7, 1914, intercurrent attack of smallpox. Returned for inspection April 28, with effusion somewhat increased in right knee. No effusion in left.

Returned to Hospital January 9, 1915, under No. 5958. Some inflammation of tonsils. Alveolar abscess at tip of root of tooth with small area of necrosis of bone around second molar. Limitation of motion in elbow joint as on previous stay in Hospital. Effusion into both knee joints; some limitation of motion in

ankles. Moderate enlargement of lymph glands in posterior cervical triangle. Abscessed teeth extracted; tonsillectomy refused.

Discharged January 21, 1915, much improved.

T. G., Hospital No. 3965. Age 29, male, white, Irish, was admitted December 19, 1913, complaining of swelling and tenderness in joints, frequent attacks of rheumatism, dyspnea swelling of ankles.

Clinical diagnosis:

1. Chronic arthritis.
2. Secondary anemia.
3. Chronic valvular disease with mitral insufficiency.
4. Pyorrhœa alveolaris.
5. Submerged tonsils.
6. Talipes valgus.

In upper extremities marked enlargement of joints. No crepitus in joints on movement; not tender, but deformed and enlarged. Leg movement good; no ulcers. Number of small brownish red hemorrhages under skin of both legs. Skin otherwise smooth and shiny. Knee joints enlarged but not tender. Right knee smooth, larger than left; both give crepitus on movement. Somewhat warmer than surrounding parts. In right knee patellar tap present. Shows moderate distension of suprapatellar bursa, ankle joints thickened, moderately red but not tender. General adenopathy.

January 22. Seems to be no abscessed condition of teeth but considerable pyorrhœa. Will have more radiographs taken. Made arrangements to treat case outside of Hospital. (Leonard.)

Patient discharged January 22, 1914, after 35 days in the Hospital, improved.

Mrs. L. F., Hospital No. 4096. Age 40.

Marked improvement following extraction of very loose pyorrhœa teeth and general treatment for pyorrhœa with use of vaccine. There was marked periarticular infiltration, and the improvement consisted of lessening of pain, redness and swelling about joints. Considerable deformity persisted. Reported dead three months after leaving hospital. Cause not determined.

Mrs. F. W., Hospital No. 3542. Admitted September 24, 1913. Age 38.

Diagnosis:

1. Exophthalmic goitre.
2. Chronic arthritis.
3. Pyorrhœa alveolaris.
4. Alveolar abscesses.

Extraction of multiple abscesses while in Hospital. Pyorrhœa treated. Marked improvement in joint condition and in symptoms of hyperthyroidism. Pulse at time of discharge varied from 80 to 112 per minute; averaged 90. Discharged November 4, 1913, much improved.

N. M., Hospital No. 4306. Age 44.

Clinical diagnosis:

1. Multiple alveolar abscesses.
2. Chronic arthritis.
3. Chronic valvular disease with mitral insufficiency.

Impossible to determine whether the marked improvement which occurred was due to removal of foci or use of vaccine. Results of vaccine therapy were not apparent. There was marked periarticular thickening, and although joint symptoms improved, considerable deformity remained.

Mrs. E. R., Hospital No. 4682. Age 54.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Chronic multiple arthritis.
3. Chronic diffuse nephritis.
4. Hypertension and atherosclerosis.

Very marked pyorrhœa with great loosening of teeth. May 16th was made very much more lame and ill as result of stirring up infection in the mouth on the 14th. June 4, two remaining teeth extracted. Not much systemic reaction. Very great improvement following cleaning out of mouth sepsis. Considerable deformity remains.

Mrs. L. F., Hospital No. 5496. Age 28. Admitted October 7, 1914.

Clinical diagnosis:

1. Chronic tonsillitis (Tonsillectomy, October 17, 1914.)
2. Alveolar abscesses.
3. Chronic rheumatoid arthritis.
4. Hypoplasia of uterus.

Multiple alveolar abscesses found. Extraction Streptococci cultivated and autogenous streptococcus vaccine given. Marked reaction about joints after use of vaccine. February 10, became melancholy; later stupid. Temperature varied from 99-101. Became gradually weaker and died March 20, of broncho-pneumonia. Autopsy by Dr. W. C. Johnson.

Autopsy diagnosis adds:

5. Acute vegetative endocarditis.
6. Acute interstitial myocarditis.
7. Broncho-pneumonia.
8. Infantile uterus and ovaries.

Mrs. L. E., Hospital No. 5847. Age 38. Polyarthritis without deformity, involving sacroiliac synchondrosis, left knee joint and tibiofibular articulation. Sciatica. The sharp sciatic pains disappeared immediately and entirely when abscessed teeth were removed, and pain over sacroiliac synchondrosis disappeared. Other joint symptoms subsided.

Mrs. C. E. W., Hospital No. 5506. Age 42.

Clinical diagnosis:

1. Chronic tonsillitis.
2. Pyorrhœa alveolaris.
3. Alveolar abscesses.
4. Chronic polyarthritis.
5. Chronic valvular disease.
6. Secondary anemia.

Uterine fibroids. Subtotal hysterectomy performed with good recovery. Patient would not permit removal of two abscessed teeth remaining after a number of other abscessed teeth were extracted. No tonsillectomy performed. Patient left hospital against advice of staff, condition distinctly improved.

A. F., Hospital No. 5641. Age 29.

Clinical diagnosis:

1. Chronic tonsillitis.
2. Pyorrhœa alveolaris.
3. Anemia (secondary type).
4. Polyarthritis (rheumatoid type) with moderate periarticular infiltration. First attack shows distinct infiltration of periarticular tissues with reddening and great tenderness.

Areas of rarefaction about one tooth root, but no evidence of infection on extraction. Pyorrhœa considered by dental service to be possible focus of infection. After treatment for pyorrhœa had an acute exacerbation of joint trouble beginning in twenty-four hours and lasting forty-eight hours. Tonsillectomy was performed, after which gradual but persistent and permanent improvement occurred.

Mrs. I. P., Hospital No. 5743. Age 33.

Clinical diagnosis:

1. Alveolar abscesses.
2. Chronic arthritis of hip.
3. Acute dry pleurisy.
4. Chronic bronchitis.
5. Fetal adenoma of thyroid.

Would not allow eradication of mouth foci.

Mrs. A. O., Hospital No. 4615. Age 53.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Alveolar abscesses.
3. Chronic valvular disease.
4. Chronic polyarthritis.

Entered hospital with marked periarticular thickening in many joints. Marked limitation of motion. Pain on pressure. Mitral and aortic insufficiency. Pyorrhœa and multiple abscesses. Removal of mouth foci was followed by marked lessening of tenderness and pain on motion. There have been no acute attacks since.

TABLE 11

|          | Hospital No. | Age | Tonsillitis | Pyorrhœa | Alveolar Abscess | Chronic Arthritis | Acute Rheumatism | Endocarditis | Nephritis | Atherosclerosis | Pepus Ulcer                | Anemia, Secondary Type | Anemia, Pernicious Type | Vaccine |
|----------|--------------|-----|-------------|----------|------------------|-------------------|------------------|--------------|-----------|-----------------|----------------------------|------------------------|-------------------------|---------|
| A A      | 4936         | 31  | *           | *        |                  | *                 | *                |              |           |                 |                            |                        |                         |         |
| E S      | 4393         | 25  |             | *        |                  | *                 | *                |              |           |                 |                            |                        |                         | *       |
| J B S    | 4686         | 40  |             | *        | *                | *                 | *                | *            |           |                 |                            |                        |                         |         |
| E G.     | 4027         | 20  |             | *        |                  | *                 | *                |              |           |                 | *                          | *                      |                         |         |
| J B      | 5909         | 37  | *           | *        | *                | *                 | *                |              |           |                 |                            |                        |                         |         |
| D E S    | 6028         | 29  | *           | *        |                  | *                 | *                |              |           |                 |                            |                        |                         |         |
| A K      | 4140         | 38  |             | *        | *                | *                 |                  |              |           |                 |                            |                        |                         | *       |
| Mrs M B  | 5514         | 26  |             | *        | *                |                   | *                |              |           |                 |                            |                        |                         |         |
| Mrs B L  | 4271         | 31  | *           | *        |                  |                   | *                |              |           |                 | Dentitis, facial neuralgia |                        |                         |         |
| Mrs M S  | 4324         | 52  | *           | *        |                  |                   | *                | *            |           |                 |                            | *                      |                         |         |
| E R      | 3605         | 33  |             | *        |                  |                   | *                | *            |           |                 |                            |                        |                         |         |
| Mrs J B. | 4954         | 75  |             | *        | *                |                   |                  | *            | *         |                 |                            |                        |                         |         |
| J O'B    | 4968         | 63  |             | *        |                  |                   |                  | *            | *         |                 |                            | *                      |                         |         |
| F M      | 5447         | 36  | *           | *        |                  |                   |                  | *            | *         |                 |                            | *                      |                         |         |
| J S.     | 5365         | 67  |             | *        |                  |                   |                  | *            |           |                 |                            |                        |                         | *       |
| F J      | 5635         | 48  |             | *        |                  |                   | *                | *            | *         |                 |                            | *                      |                         |         |
| F L H    | 5556         | 63  |             | *        | *                |                   | *                | *            | *         |                 |                            | *                      |                         |         |
| M C      | 4247         | 22  |             | *        |                  |                   | *                | *            | *         |                 |                            | *                      |                         |         |
| N W      | 5576         | 56  |             | *        | *                |                   |                  | *            | *         |                 |                            | *                      |                         |         |
| Mrs R B  | 4438         | 39  |             | *        |                  |                   |                  | *            | *         |                 |                            | *                      |                         |         |
| N S      | 4892         | 50  |             | *        | *                |                   |                  | *            | *         |                 |                            | *                      |                         |         |

NOTES ON CASES IN TABLE II.

A. A., Hospital No. 4936. Male, age 31.

Clinical diagnosis:

1. Chronic tonsillitis.
2. Alveolar abscesses.
3. Acute rheumatism.
4. Endocarditis.
5. Syphilis (positive Wassermann).

Marked soreness and stiffness of joints quite persistent. No periarticular thickening. Marked improvement of symptoms following eradication of areas of peridental infection. Cultures from dental abscesses gave streptococcus viridans and bacillus coli.

E. S., Hospital No. 4393. Male, age 25.

Clinical diagnosis:

1. Alveolar abscesses.
2. Acute rheumatism.
3. Chronic valvular disease.

Pericarditis with effusion; ulcer of esophagus and cardiospasm. Marked improvement followed extraction of abscessed teeth. There was temperature reaction after first injection of vaccine. Left hospital symptomatically well.

J. B. S., Hospital No. 4686. Male, age 40.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Alveolar abscesses.
3. Acute rheumatism.
4. Acute endocarditis and myocarditis.
5. Acute nephritis.

Multiple dental abscesses had existed for years. No evidence of tonsil infection. Heart sound showed triple rhythm, and electro-cardiographic tracings show increase of As-Vs interval to 3/10 second. Died. No autopsy allowed.

E. G., Hospital No. 4027. Male, age 20.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Acute rheumatism.
3. Chronic and acute endocarditis.
4. Peptic ulcer.
5. Anemia (secondary type).
6. Former gastroenterostomy with patulous opening.
7. Diabetes mellitus.

Treatment of pyorrhœa begun promptly. Patient had a prompt subsidence of the rheumatic symptoms after admission, and February 1, 1914, 30 days after admission to the Hospital, he had hematemesis with considerable loss of blood. Five days later stools still showed a small amount of occult blood. The sugar, which had disappeared before the hematemesis, appeared in small quantity immediately following it. Absent since. Marked improvement of all symptoms.

J. B., Hospital No. 5909. Male, age 37.

Clinical diagnosis:

1. Chronic tonsillitis.
2. Pyorrhœa alveolaris.
3. Alveolar abscesses.
4. Acute rheumatism.
5. Chronic valvular disease with mitral insufficiency.
6. Syphilis (positive Wassermann).

Marked improvement promptly followed removal of alveolar abscesses. Discharged after one month, much improved. No anti-syphilitic treatment given.

D. E. S., Hospital No. 6028. Male, age 29

Had injury, breaking three ribs, ten weeks previous to admission. Was in another hospital for eight days, then home. A month after injury attempted to go to work, but was found to be coming down with acute pneumonia. During convalescence from pneumonia, stiffness and pain in joints appeared with swelling after a few days. An attack of acute rheumatism developed, and he was brought to the University Hospital in this condition. No history of infection of tonsils preceding rheumatism, but evidences of active tonsillitis were found on admission. Eight abscesses found at roots of teeth. Extraction of abscessed teeth proceeded with cautiously. Tonsillectomy was finally advised and performed five weeks after admission. Considerable hemorrhage followed this. Subsequent improvement rapid and continuous.

A. K., Hospital No. 4140. Age 38, male, white, American, laborer, admitted to the University Hospital January 26, 1914, complaining of swelling of right wrist, left ankle, aching and soreness in infected joints, sharp pain in right chest passing away after few short breaths, weakness and sleeplessness.

Examination of extremities shows tenderness in right shoulder and elbow; right wrist and hand very tender, and wrist distinctly swollen. Moderate swelling below external malleolus. Left ankle and left foot distinctly tender.

Examination of mouth shows teeth of upper right—2nd, 3d and 8th—dead, and probably septic; upper left 1st, also some pyorrhœa and much filthy accumulation on gum margin. Disagreeable odor from mouth. February 3. Extracted upper left central incisors and right lateral incisors for cultures for vaccine. Streptococcus viridans. February 14. Could not extract right lateral 3d so cut it out with burr, curetting a large abscessed sinus at the same time. (Leonard.)

Diagnosis:

1. Pyorrhœa alveolaris.
2. Dental abscesses.
3. Glandular adenopathy.
4. Acute rheumatism.

Mild reactions followed use of vaccine.

He was discharged February 26, 1914, much improved.

Mrs. M. B., Hospital No. 5514. Age 26, American, white, admitted October 9, 1914.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Alveolar abscesses.
3. Chronic valvular disease with mitral stenosis.
4. Achylia gastrica.
5. Asthenia.

Marked improvement, particularly of neurasthenic symptoms, following dental work. Patient did not allow completion of all work, although the abscesses were removed. Pyorrhœa was not completely eradicated.

Mrs. B. L., Hospital No. 4271. Age 31.

Diagnosis:

1. Chronic tonsillitis.
2. Alveolar abscesses.
3. Chronic valvular disease of heart.
4. Iritis.
5. Facial neuralgia.

Remarkable improvement with complete disappearance of iritis and neuralgia after removal of teeth and tonsillectomy.

Mrs. M. S., Hospital No. 4324. Age 52.

Clinical diagnosis:

1. Chronic tonsillitis.
2. Pyorrhoea alveolaris.
3. Chronic valvular disease of heart.
4. Anemia (secondary type).

Much joint soreness and pain without swelling or redness. Joint pains decidedly improved. April 1, 1915, states that she has had no acute attack of joint pains since leaving the hospital.

E. R., Hospital No. 3605. Age 33, male. Admitted October 4, 1913.

Clinical diagnosis:

1. Pyorrhoea alveolaris and ulcerative stomatitis (fusiform bacillus and spirillum of Vincent). Streptococci found in pyorrhoea pockets.
2. Chronic valvular disease with aortic insufficiency, mitral insufficiency and stenosis.
3. Passive congestion of lungs, liver, and spleen.
4. Ascites.
5. Chronic interstitial nephritis.
6. Purpura (over both legs).
7. Secondary anemia.

Note by Dr. Hartzell. In mouth, bone is necrotic in the lower arch on all sides from central back to a depth of  $\frac{1}{8}$  inch.

Died, October 21, 1913.

Autopsy diagnosis confirms above, adding (8) Lobar pneumonia; (9) Chronic pleuritis; (10) Infarcts of spleen and kidneys). Streptococci found in heart blood. Microscopically, foci of infiltration in myocardium.

Mrs. J. C., Hospital No. 4954. Age 75.

Gastroptosis, nephritis and severe mouth sepsis with pyorrhoea, multiple alveolar abscesses and ulcerative stomatitis. Marked reduction of kidney excretion, as shown by phenol sulphon phthalein test. Remained only 21 days and little improvement seen.

J. O. B., Hospital No. 4968. Male, age 63.

Clinical diagnosis:

1. Pyorrhoea alveolaris.
2. Chronic nephritis.
3. Arteriosclerosis.
4. Secondary anemia.
5. Achylia gastrica.
6. Chronic colitis.

The pyorrhoea was extreme and there were many dead pulps. Dental service advised complete extraction. This was done September 22, 1914. Discharged October 23, 1914, greatly improved. Improvement has persisted, although he relapsed twice after residence in hospital before this.

F. M., Hospital No. 5447. Male, age 36, white. Admitted February 28, 1914.

Clinical diagnosis:

1. Chronic tonsillitis.
2. Pyorrhoea alveolaris.
3. Chronic nephritis.
4. Arterial hypertension and sclerosis.
5. Cardiac hypertrophy.
6. Passive congestion of viscera.
7. Anemia (secondary type).

General care given and pyorrhoea radically treated by dental service. Prompt improvement occurred and he was discharged December 16, 1914, greatly improved.

J. S., Hospital No. 5365. Male, age 67, admitted February 14, 1914.

Clinical diagnosis:

1. Pyorrhoea alveolaris.
2. Chronic nephritis.

3. Anemia (pernicious type).

4. Hypertrophy and dilation of heart with mitral insufficiency.

Pyorrhoea treated radically by dental service, apparently without effect. Died November 3, 1914. Autopsy not permitted.

F. J., Hospital No. 5635. Male, age 55.

Clinical diagnosis:

1. Alveolar abscesses.
2. Chronic valvular disease with mitral and aortic insufficiency.
3. Chronic nephritis.
4. Atherosclerosis.
5. Secondary anemia.
6. Chronic bronchitis.

Foci of mouth sepsis were cautiously attacked by dental service and finally eradicated. Moderate improvement.

F. L. H., Hospital No. 5556. Age 63.

Entered Hospital with chronic valvular disease, decompensation of heart, ascites and anasarca. Multiple alveolar abscesses found and treated by extraction. Death 77 days after admission. Autopsy by Dr. W. C. Johnson.

Autopsy diagnosis:

1. Cardiac hypertrophy and dilation.
2. Chronic endocarditis—aortic and mitral.
3. Atheroma and dilation of aorta.
4. Thrombosis of right auricle.
5. Atheroma of coronary arteries.
6. Chronic pericarditis.
7. Pulmonary infarct.
8. Hemothorax.
9. Chronic pleuritis.
10. Healed miliary tuberculosis of spleen.
11. Passive congestion of lungs, spleen and kidneys.
12. Meckel's diverticulum.

M. C., Hospital No. 4247. Age 22, female.

Clinical diagnosis:

1. Chronic nephritis.
2. Splenic anemia (?) with splenomegaly.
3. Hypertrophy of heart.
4. Atherosclerosis.
5. Alveolar abscesses.

Would not allow extraction. February 20, 1914, hemoglobin 46 per cent; r. b. c. 3,100,000; leucocytes 3,600. April 23, 1914, hemoglobin 36 per cent; r. b. c. 2,768,000; leucocytes 2,840. December 17, 1914, hemoglobin 38 per cent; r. b. c. 2,500,000; leucocytes 2,500.

Condition unimproved.

N. W., Hospital No. 5576. Age 56, male.

Marked pyorrhoea; numerous dental abscesses. Has a marked nephritis with moderate reduction of excretion of phenol sulphon phthalein in two hours. Improvement moderate after elimination of mouth sepsis. Albumen persists in traces. Moderate secondary anemia.

Mrs. R. B., Hospital No. 4438. Age 39, Jewish, white, admitted April 2, 1914.

Diagnosis:

1. Secondary anemia (high grade).
2. General pigmentation.
3. Slight cardiac dilatation.
4. Visceroptosis.
5. Albuminuria.
6. Chronic (nasal septum) ulcer.
7. Diastasis recti.
8. Asthenia.
9. Pyorrhoea alveolaris.
10. Enlargement of thyroid (moderate grade).

Dental radiograph shows upper left central and lateral roots unfilled, with slight rarified area at end of lateral. Also shows cusps impacted with crowns pointing mesially and lying horizontally. (Dr. Leonard.)

Pyorrhoea treated radically. Patient responded very well to rest in bed and iron, her hemoglobin rising from 26 per cent to 67 per cent. Sixty-seven per cent was estimated the 27th of May. Patient left Hospital June 3, 1914, much improved.

Note by Dr. Ulrich: "One of the interesting features of her case was that there were points suggesting congenital hemolytic jaundice; but testing the resistance of red blood corpuscles dismissed this supposition, and it was shown to be an ordinary case of secondary anemia."

N. S., Hospital No. 4892. Male, age 50, admitted June 19, 1914.

Clinical diagnosis:

1. Pyorrhoea alveolaris.
2. Alveolar abscesses.
3. Chronic nephritis.
4. Atherosclerosis.
5. Hypertrophy of heart.
6. Chronic passive congestion of viscera.
7. Anemia (secondary type).

Died November 28, 1914. Autopsy by Dr. W. C. Johnson.

Autopsy diagnosis:

1. Chronic interstitial nephritis with multiple renal adenomata.
2. Cardiac hypertrophy and dilatation.
3. Chronic endocarditis.
4. Acute fibrinous pericarditis.
5. Chronic pericarditis.
6. Atheroma of aorta.
7. Edema of lungs.
8. Congestion of spleen and chronic perisplenitis.
9. Slight passive congestion of liver.
10. Chronic interstitial pancreatitis.
11. Ascites.
12. Edema.

NOTES ON CASES IN TABLE III.

T. D., Hospital No. 3752. Age 45, male, white, admitted November 3, 1913.

Clinical diagnosis:

1. Pyorrhoea alveolaris.
2. Peptic ulcer.
3. Anemia (secondary type).

Treated by rest in bed, feeding every two hours, followed by administration of alkalis and ferrous carbonate.

Notes by dental service show marked mouth sepsis, and pyorrhoea was treated radically. Discharged December 23, with mouth in very good condition. Gastric symptoms have disappeared, and patient has remained well.

W. C., Hospital No. 5356. Age 31, male.

Diagnosis:

1. Pyorrhoea alveolaris.
2. Alveolar abscesses.
3. Chronic valvular disease with mitral insufficiency.
4. Peptic ulcer.
5. Anemia (secondary type).

Mouth sepsis was thoroughly eradicated. Rapid improvement. Reappeared for examination four months after dismissal. States that before admission he was troubled almost continuously with stomach symptoms, but since leaving the hospital has been absolutely free and never had so long a period of freedom from symptoms before.

E. R., Hospital No. 5629. Male, age 26.

Clinical diagnosis:

1. Gastric ulcer.
2. Mitral insufficiency.
3. Chronic tonsillitis (tonsillectomy).
4. Alveolar abscesses (extraction while in hospital).

Treatment in this case is that usually given peptic ulcer cases. Improvement after eliminating foci of infection was very rapid. He has remained well.

Mrs. S. G., Hospital No. 4838. Jewish, age 34, female, white, admitted June 9, 1914.

Clinical diagnosis:

1. Dental caries and alveolar abscesses.
2. Secondary anemia.
3. Asthenia.

Mouth sepsis eradicated. Moderate improvement in general condition. Hemoglobin 6/20/14, 67 per cent; 7/17/14, 85 per cent. Iron carbonate administered while in hospital.

F. W., Hospital No. 4978. Female, age 37, admitted July 7, 1914.

Clinical diagnosis:

1. Pyorrhoea alveolaris.
2. Alveolar abscesses.
3. Albuminuria.
4. Anemia (secondary type).

Mouth sepsis eradicated by extraction of all remaining teeth and many septic roots. Marked improvement.

Mrs. T. S., Hospital No. 5415. Female, age 19.

Clinical diagnosis:

1. Chronic tonsillitis.
2. Pyorrhoea alveolaris.
3. Alveolar abscesses.
4. Chronic valvular disease.
5. Anemia (secondary type).

Came to hospital because of anemia. Anemia began to improve before elimination of alveolar abscesses attempted. Dental treatment did not exert demonstrable influence in general improvement, which was rapid.

TABLE III

|         | Hospital No | Age | Tonsillitis | Pyorrhoea | Alveolar Abscess | Chronic Arthritis | Acute Rheumatism | Endocarditis                               | Nephritis | Atherosclerosis | Peptic Ulcer | Anemia, Secondary Type | Anemia, Pernicious Type | Vaccine |
|---------|-------------|-----|-------------|-----------|------------------|-------------------|------------------|--|-----------|-----------------|--------------|------------------------|-------------------------|---------|
| T D     | 3752        | 31  |             | •         |                  |                   |                  |  |           |                 |              | •                      |                         |         |
| W C     | 5356        | 31  |             | •         | •                |                   |                  | •  |           |                 |              | •                      |                         |         |
| E R     | 5629        | 26  | •           |           | •                |                   |                  | •  |           |                 |              | •                      |                         |         |
| Mrs S G | 4838        | 34  |             |           | •                |                   |                  |  |           |                 |              |                        | •                       |         |
| F W     | 4978        | 37  |             | •         | •                |                   |                  |  |           |                 |              | •                      |                         |         |
| Mrs T S | 5414        | 19  | •           | •         | •                |                   |                  | •  |           |                 |              | •                      |                         |         |
| I J     | 5102        | 28  |             | •         | •                |                   |                  |  |           |                 |              | •                      |                         |         |
| R E M   | (Special)   | 38  |             | •         | •                |                   |                  | •  |           |                 |              |                        |                         |         |
| A McE.  | 4399        | 52  |             |           | •                |                   |                  |  |           |                 |              |                        | •                       |         |
| I B B   | 3191        | 54  |             | •         |                  |                   |                  |  |           |                 |              |                        | •                       |         |
| J S     | 5074 5928   | 66  |             | •         | •                |                   |                  |  |           |                 |              |                        | •                       |         |
| J A     | 5738        | 51  |             |           | •                |                   |                  |  |           |                 |              |                        | •                       |         |
| M O D   | 5481        | 63  |             | •         | •                |                   |                  | Chronic cholecystitis                      |           |                 |              | •                      |                         |         |
| H O     | 5694        | 38  |             | •         |                  |                   |                  | Hypochlorhyria with persistent diarrhoea   |           |                 |              |                        |                         |         |
| Mrs C C | 5345        | 23  |             |           | •                |                   |                  | Multiple neuritis, pelvic cellulitis (old) |           |                 |              | •                      |                         |         |
| Mrs R R | 4206        | 49  |             | •         |                  |                   |                  | Sciatic neuritis (bilateral)               |           |                 |              |                        |                         |         |
| J McG   | 4720        | 36  | •           | •         |                  |                   |                  | Sinusitis (ethmoidal) Bronchial asthma     |           |                 |              |                        | •                       |         |
| J B     | 5132        | 43  |             | •         |                  |                   |                  | Lobar pneumonia delayed resolution         |           |                 |              |                        |                         |         |

I. J., Hospital No. 5102. Female, age 28.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Dental abscesses.
3. Chronic valvular disease.
4. Anemia (secondary type).
5. Syphilis (?)

Wassermann reaction negative, but patient had been taking mercurial treatment before admission.

Notes by dental service record extensive infection of teeth. Undetermined whether possible syphilitic infection or mouth sepsis responsible for condition.

R. E. M. Special. Male, age 36, white.

Clinical diagnosis:

1. Alveolar abscesses.
2. Chronic valvular disease with aortic and mitral insufficiency.
3. Auricular fibrillation.

Extraction of all these infected teeth done at one time, against advice of staff, outside of hospital. Patient returned with marked sepsis of jaws and in a very serious condition. Was in bed two weeks, but a month was required before he was able to return to work.

A. McE., Hospital No. 4399. Male, age 52. Admitted March 21, 1914.

Clinical diagnosis:

1. Pernicious anemia.
2. Alveolar abscesses, upper right central, lower right third molar, lower left third molar.

Alveolar abscesses treated by extraction of teeth involved.

#### BLOOD COUNTS:

March 22, 1914, r. b. c. 1,100,000; hemoglobin 18 per cent; leucocytes 4,500; marked poikilocytosis and anisocytosis. Normoblasts and megaloblasts present. Lymphocytes 38.5; large mononuclear, 1 per cent; transitional, 0 per cent; polymorphonuclear, 60 per cent; eosinophile, 0 per cent; basophile, 5 per cent.

April 2, 1914, r. b. c. 900,000; hemoglobin 15 per cent.

April 8, 1914, r. b. c. 700,000; hemoglobin 21 per cent.

April 18, 1914, r. b. c. 1,300,000; hemoglobin 31 per cent.

He left the hospital against the advice of the staff. Patient reported for examination September 9, 1914. He stated that he felt well except shortness of breath and swelling of legs. On examination, a fair amount of edema of the legs between the knee and ankle found, but practically absent below. Showed a moderate degree of emaciation; skin yellowish brown color; liver margin at umbilical level. Heart moderately dilated. Marked systolic thrill over entire heart and up into carotids. Well marked diastolic murmur transmitted down left side of sternum.

J. B. B., Hospital No. 3191. Male, age 54.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Pernicious anemia.

First admission July 3, 1913, to July 18, 1913. Fifteen days in hospital. On admission, hemoglobin 40 per cent; r. b. c. 1,240,000. On discharge, hemoglobin 38 per cent; r. b. c. 1,750,000. Left hospital against advice of attending physician. Readmitted May 27, 1914 (second admission No. 3346), to August 8, 1914. October 20, blood on admission: hemoglobin 50 per cent; r. b. c. 1,796,000. On discharge, hemoglobin 72 per cent; r. b. c. 3,736,000. *Trichomonas intestinalis* found in stool August 24. Disappeared promptly from stool following use of liquor potassii arsenitis and dilute hydrochloric acid and pepsin. On both of these visits to hospital, pyorrhœa found and oral hygiene used. Readmitted July 24, 1914, No. 5067; discharged October 28, 1914. Blood examination: hemoglobin 30 per cent;

r. b. c. 1,600,000. On discharge hemoglobin 69 per cent; r. b. c. 3,900,000. Dental service found no evidence of abscesses. Moderate gingivitis. Mouth responded promptly to dental treatment.

J. S., Hospital No. 5074 and No. 5928. Age 66, male. Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Alveolar abscesses.
3. Anemia (pernicious type).

Blood examination August 4, 1914: Hemoglobin 30 per cent; r. b. c. 1,200,000. November 5, 1914, hemoglobin 37 per cent; r. b. c. 1,900,000. Moderate improvement after clearing out of mouth sepsis. Patient returned after six weeks. January 6, 1915, hemoglobin 32 per cent; r. b. c. 1,200,000. January 18, 1915, hemoglobin 37 per cent; r. b. c. 2,000,000. Left hospital condition much improved. During second residence in hospital, pyorrhœa but no abscesses found.

J. A., Hospital No. 5738. Male, age 51.

A typical case of pernicious anemia. Four teeth with large alveolar abscesses and much pyorrhœa. Radical treatment. December 2, 1914, hemoglobin 18 per cent; r. b. c. 1,100,000; leucocytes 300. February 4, 1915, hemoglobin 54 per cent; r. b. c. 2,400,000.

M. O. D. Hospital No. 5481. Male, age 63, admitted October 4, 1914.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Alveolar abscesses.
3. Chronic cholecystitis.
4. Anemia (secondary type).

Infected teeth extracted. Operated by surgical service. No evidence of ulcer or carcinoma found. A fatty, whitish, enlarged gall-bladder was adherent to duodenum. Paplitation of region of appendix gave no evidence of infection. Discharged December 14, 1914, symptomatically well.

H. O., Hospital No. 5695. Male, age 38.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Hypochlorhydria with persistent diarrhœa.

No blood, parasites or pus in stool. Mouth was in filthy condition with pyorrhœa, and several old roots, as noted by Dr. Leonard. Treatment directed to this. Improvement began promptly and persisted.

Mrs. C. C., Hospital No. 5345. Age 23, admitted September 10, 1914.

Clinical diagnosis:

1. Alveolar abscesses.
2. Multiple neuritis.
3. Pelvic cellulitis (old).
4. Anemia (secondary type).

Gave history of having had facial neuralgia a year before. Relieved by extraction of upper left molar. Extraction of infected teeth followed by prompt improvement. Notes by Neurological service show impairment of sensibility to touch in both hands and feet. At time of discharge, November 21, 1914, sensation in hands entirely restored and marked improvement in feet.

Mrs. R. R., Hospital No. 4206. Age 49, female.

Clinical diagnosis:

1. Pyorrhœa alveolaris.
2. Sciatic neuritis (bilateral).
3. Retroversion of uterus.
4. Laceration of cervix.

Radical treatment of pyorrhœa with complete improvement of neuritis.

J. McG., Hospital No. 4720. Male, age 36. Admitted May 20, 1914, discharged September 10, 1914.

Clinical diagnosis:

1. Chronic tonsillitis and pharyngitis.
2. Alveolar abscesses.
3. Ethmoidal sinusitis.
4. Bronchial asthma.
5. Pulmonary emphysema.
6. Fibrosis, apex left lung.

Extraction of infected teeth by dental service. *Streptococcus viridans* obtained from apical abscess and autogenous vaccine made. Some general reaction with headache and malaise following administration of vaccine. Marked improvement of all symptoms.

J. B., Hospital No. 5132. Male, age 43.

Entered with lobar pneumonia with delayed resolution. Multiple alveolar abscesses found. While convalescing, areas of mouth sepsis eliminated. Convalescence rapid. Patient left hospital well.

occurred with pyorrhœa, in 7 with alveolar abscess, and in 5 with both.

(b) Pyorrhœa. This includes the cases in which the dental service found clear evidence of pyorrhœal infection, sometimes limited to one or two teeth, often extensive with large areas of granulation tissue lining the pockets. Of the 55 cases, 35 or 63.6 per cent showed pyorrhœa; in 12 it occurred alone, in 3 with tonsillitis, in 15 with alveolar abscess, and in 5 with tonsillitis and alveolar abscess.

(c) Alveolar abscesses. This includes 40 of the 55, or 72.7 per cent: cases in which röntgenographic, microscopic, and bacteriologic evidence of abscess were found at the roots of the teeth. In a few instances the abscess was single: in the majority, multiple: and as high as 6 and 8 abscesses were found by the dental service in the alveolar processes of a single patient.

It is not proposed to discuss here the etiology of alveolar abscess, as that question is foreign to the topic, but a few considerations are of extreme interest and importance to the physician, and need mention. Almost without exception the alveolar abscesses are found in devitalized teeth, devitalization having occurred either through caries with involvement of the pulp canal, or through artificial devitalization by the dental operator in preparation for crowning or bridge work. The relationship of this devitalization to alveolar abscess appears to be still unsettled. Ulrich<sup>13</sup> believes that the tip of a devitalized tooth becomes a *locus minoris resistentiae*, and that the infection of the tooth apex is hematogenous in origin.

On the other hand, it seems almost inconceivable that either the death of a tooth pulp through natural process of caries, or through artificial destruction with subsequent filling of the pulp chamber, could occur without infection of the tissues about the tooth tip. Examination of radiographs showing the filling material in the pulp chamber of devitalized teeth shows the majority of such fillings to be imperfect, and therefore to invite infection. When to this is added the fact that for the most part dental asepsis has not as yet reached the perfection of the surgical operating rooms, it becomes apparent that the methods used are such as to invite, rather than prevent, infection. These are questions, however, for the dentist, and Dr. Hartzell and his co-workers, with many others in the dental profession are seeking to solve by experimental methods the questions in the etiology of alveolar abscess. It is the existence of such abscesses, the means of their discovery and the systemic disease they may cause, that interests the physician.

In reviewing our cases, the first group is that of chronic arthritis of the infective type. Sixteen cases are included.

Concerning chronic arthritis, our knowledge is as yet incomplete. As to the probable points of origin, we most commonly find infections about

TABLE IV  
SUMMARY OF I, II and III

|  | Tonsillitis | Pyorrhœa | Alveolar Abscess | Chronic Arthritis | Acute Rheumatism | Endocarditis | Nephritis | Athero-sclerosis | Peptic Ulcer | Anæmia, Secondary Type | Anæmia, Peritonæic Type | Vaccine |   |
|--|-------------|----------|------------------|-------------------|------------------|--------------|-----------|------------------|--------------|------------------------|-------------------------|---------|---|
| Total 55 cases                             | 15          | 35       | 40               | 16                | 7                | 25           | 13        | 10               | 4            | 22                     | 5                       | 12      |   |
| Tonsillitis                                |             | 3        | 7                | 6                 | 3                | 8            | 2         | 2                | 1            | 6                      | 0                       |         |   |
| Pyorrhœa                                   |             |          | 12               | 15                | 10               | 4            | 15        | 11               | 7            | 3                      | 18                      | 3       |   |
| Alveolar abscess                           |             |          |                  | 15                | 13               | 12           | 6         | 20               | 7            | 6                      | 2                       | 14      | 3 |
| Tonsillitis, pyorrhœa and alveolar abscess |             |          |                  | 5                 | 5                | 3            | 1         | 2                | 1            |                        | 3                       |         |   |

Tables I to IV give the occurrence of

(a) Tonsillitis. Under this head are included all cases with clinical evidences of tonsillar infection, either active or recent, or tonsils with marked scarring and adherence to the pillars of the fauces. In the majority of instances tonsillectomy was requested by the medical service and carried out by the nose and throat service of the hospital, radical extirpation being done. This was considered an essential step in the management of all cases included in this group, even though evident dental and parodontal infection was found, since the tonsils often fail to give gross evidence of disease, and yet, when adherent and buried, give microscopic and bacteriologic evidence of infection.

Infections in the tonsils and in the teeth are closely related. That tonsillar infection can be, and often is, the source of these dental infections both by continuity of surface and through the blood stream, seems certain. That the parodontal foci may be primary seems also certain. The structural and mechanical peculiarities of each region are such that persistence of infection is invited, physiologic rest is practically impossible, and destruction of infective organisms cannot readily occur. Chronic focal infection is a common result. The needs of the patient demand the elimination of both when diseased, for either may be the source of dissemination, whether primary or secondary.

In the 55 cases included in this study, tonsillitis occurred in 15, or 27.3 per cent. In 3 it

<sup>13</sup> H. L. Ulrich, "Some Medical Aspects of Certain Mouth Infections." *The Dental Review*, December, 1914.

the teeth, in accessory nasal cavities, the prostate, or the gall-bladder. In the University Hospital the greatest emphasis is placed on the paradental infections. Of the 16 cases, 6 gave evidences of tonsillar infection; 10 had pyorrhœa; 12 had alveolar abscesses with one additional case (No. 5641) showing some absorption of bone about a root tip; 3 had pyorrhœa and abscesses without tonsillar disease, and 3 gave clear evidence of infection of all three regions.

A difficulty in studying results of treatment in this group arises because of the well-known chronicity, the occasional occurrence of long periods of remission, and the relative permanency of periartritic changes, the integrity of the joint often being more or less permanently impaired, even after the source of infection has been removed. One must guard against hasty conclusions in this field, the only safe criteria of results being the relief from further progress of the lesions with the disappearance of the mild attacks of inflammation. Another source of difficulty is that there may be multiple foci of infection, not all necessarily in one region, and the focus or foci responsible for the disorder may be overlooked, while one or many others have been eliminated.

Among this group of 55 with mouth infection and systemic disease, acute rheumatism occurred 7 times (see Table II), and in only 3 cases was a history of any evidence of tonsillar infection obtainable. Four of the cases had pyorrhœa, and in 6 alveolar abscesses were found. This group is of particular interest because of the generally accepted relationship of tonsillitis to acute rheumatism. The writer is not disposed to be dogmatic here and say that, since evidences of tonsillitis were not found in 4 cases, such tonsillitis did not exist. Experience has shown that it is entirely possible for tonsillar infection to exist deep in the tissues and give only the most indefinite symptoms and signs, even with careful study.

Endocarditis occurred in 25, or 45.4 per cent of the group. (See Tables I, II, and III.) This includes all cases with evidences of chronic or acute valvular disease. Great significance cannot be attached to this, so far as establishing a relationship to mouth sepsis is concerned, because the persistence of valvular defects makes a permanent record of septic processes which have attacked the endocardium of a given patient up to the time of study. These endocardial involvements occurred in the cases studied under practically all of the groups, they are evidences of a hematogenous infection, and the high percentage of incidence in individuals with mouth infection is very striking, especially when viewed together with the experimental evidence to show the affinity of streptococci from dental sources, for cardiovascular tissues. Eight of the cases gave evidence of tonsillar infection. Myocarditis is not included in the tabulation, a clinical diagnosis of this disorder being often enough made but not often enough proven. In two autopsies, Mrs. L. F., No. 5496 (Table I) and E. R., No.

3605 (Table II), myocarditis was found. It is to be hoped that accurate polygraphic and electrocardiographic studies will give us more definite information in certain clinical cases through evidence of altered conduction time when this occurs. In one case, J. B. S., No. 4686, in which a clinical diagnosis of myocarditis was made, such evidence was found. Pericarditis was found in 3 cases: E. S., No. 4393, F. L. H., No. 5556, and N. S., No. 4892 (Table II).

Thirteen instances of nephritis are included, and this occurred usually with other manifestations of disseminated infection. They are of interest, particularly because the experimental work with rabbits has shown distinct tendency for streptococci from dental sources to attack not only the myocardium, endocardium and vascular walls, but the kidney as well.<sup>14</sup>

The group for atherosclerosis is incidental and shows that 10 of the 55 cases, or 18.2 per cent, give clinical evidences of this condition. The number is not large enough to allow statistical analysis, but 4 of these patients were aged 50 years or less.

The work of Rosenow<sup>15</sup> pointing toward an infection, hematogenous in origin, for gastric ulcer has secured prompt attention. It is in line with established theories as to the causation or probable cause of this as yet obscure disease. Since this cause or probable cause of gastric ulcer has been called to our attention, the number of instances in which septic foci in the mouth are found has increased.

Four of the cases of mouth sepsis had peptic ulcer, and in every instance very prompt subsidence of symptoms followed removal of the dental foci. Careful dieting was not neglected in the care of these patients, but following the apparent cure in the wards, full diet has been recommended, so far without relapse in any of the cases.

Cholecystitis and pyelitis occur frequently in connection with infective processes of the type under discussion, although seen often enough under conditions where no such focus can be found. No such case should be passed over without attention to the possibility of an infective source in the alveolar processes, tonsils or elsewhere. One case only, M. O. D., No. 5481 (Table III), with cholecystitis is found here. I have found alveolar abscesses in 3 other cases in as many months.

Bissell,<sup>16</sup> as a result of an extensive experience, as a Röntgenologist, in the recognition of alveolar and other focal infections, suggests the origin of renal colic and renal calculus in a similar manner. He also refers to a large group of cases whose radiographic picture is that of a peribronchial infection somewhat resembling that of tuberculosis, but differing therefrom in certain

<sup>14</sup> Hartzell, "Metastatic Streptococcal Infections Arising from Primary Infections in the Neighborhood of the Human Teeth." Paper prepared for Philadelphia Academy of Stomatology, November 24, 1914.

<sup>15</sup> *Jour. Amer. Med. Assn.*, Vol. LXIII, No. 23, December 5, 1914, p. 2027.

<sup>16</sup> The X-ray in the Diagnosis of Focal Infections, to be published soon in *Journal-Lancet*.



essential particulars. He says: "We have found dental abscesses in so many of these cases, that I have come to regard them as 'peribronchial streptococcoses' following Dr. H. L. Ulrich's suggestion as to terminology," and adds "I wish to emphasize the statement that this is an unestablished hypothesis still lacking scientific confirmation."

In our clinic we have now seen a small number of these cases, reacting negatively to tuberculin given subcutaneously, but are not as yet in a position to prove either the bacterial cause for the condition or the relationship to a focal infection elsewhere. These cases are therefore not included in the tabulations.

The anemias of the so-called secondary type are frequently found in connection with infections of all kinds: but it has been only recently that the clinician has learned to reason backward to an infective focus as a probable cause for anemia in obscure cases. The focal infections under consideration are frequently accompanied by a moderate and sometimes severe grade of anemia, although this anemia is not usually found alone but more commonly accompanies other manifestations of a disseminated infective process. The experience, now frequently repeated, of seeing an anemia lessen or disappear after the elimination of dental and paradental foci of infection leads us now to include such infections among the probable causes.

Of the 55 cases analyzed, 22 or 40 per cent gave evidence of anemia of the secondary type.

Five cases of anemia of the pernicious type are included. Four (see Table III) are cases in which no other recognizable cause could be found, careful search being made for intestinal parasites and neoplasms, and careful study being made to exclude, if possible, a nephritis sufficient to cause the condition. In one additional case, J. S., No. 5365 (Table II), a nephritis existed, and was looked upon as a probable cause. The results of eradication of dental foci in this group have been disappointing, the improvement occurring being scarcely greater than that so commonly seen in pernicious anemia. The cases are included because of the marked oral sepsis present, but the relationship is still obscure.

Isolated instances of other conditions are included, such as exophthalmic goitre occurring in a patient with chronic arthritis (Mrs. F. W., No. 3542, Table I): iritis and facial neuralgia, with chronic endocarditis, (Mrs. B. L., No. 4271): multiple neuritis with old pelvic cellulitis and secondary anemia (Mrs. C. C., No. 5345): sciatic neuritis, bilateral (Mrs. R. R., No. 4206): sinusitis (ethmoidal) (J. McG., No. 4720): lobar pneumonia with delayed resolution (J. B., No. 5132): and hypochlorhydria with persistent diarrhoea (H. O., No. 5694). The inclusion of the above cases may readily be criticised, but in each instance marked oral sepsis was found and the eradication was followed by prompt and striking recovery. The clinician sees the above types outside of, more frequently than in, the hospital.

It should be noted that from this tabulation of 55 cases, as many more cases with mouth infection in our wards have been excluded because of a lack of any definite relationship to the clinical condition. In many of these latter, eradication of foci of infection appeared to allow a prompt increase in resistance with improvement of other apparently unrelated conditions. I have been particularly struck with the marked advantage secured in a number of cases of early, non-ulcerative, so-called "incipient" tuberculosis through eradication of any existing focal infections, in the mouth or elsewhere. The work of the dental service is now established as a necessity in our medical clinic.

In 12 cases of the whole group studied, autogenous vaccines (bacterins) were used, the culture being secured from an abscess or pyorrhœa pocket. All but three of these were cases of chronic arthritis. In the majority of instances the injection of the vaccine was followed by an inflammatory reaction about the joints, indicating a specific relationship. No brilliant results, except possibly the cases of A. P., No. 1032 and 2806, and M. B., No. 3732 (both in Table I), have been secured, and the number of cases is too small to use statistically. Vaccines have not been used except in connection with complete eradication of known foci, and it is therefore impossible to claim more than a helpful influence for them. It is hoped to have a much larger series eventually for analysis. In this field, the aid of a competent immunologist must be secured, for many problems of individual resistance and reaction arise, and the dosage must be varied with the character of the case and the nature of the reactions.

The problem of eradication of dental foci of infection differs radically from that presented in the tonsils. In the case of the tonsil, the clinical evidences of infection may be difficult to secure. One who has systematically attempted to eradicate focal infections will be often called upon to insist upon the removal of a fairly innocent-looking pair of tonsils even in the face of statements by competent nose and throat surgeons that the tonsils do not appear diseased. We frequently see infection arising from tonsils which are small, buried and adherent to the pillars and that show no external sign of inflammation, except possibly a streak of reddening along the pillar. Such tonsils are as frequently the source of systemic dissemination as the frankly and evidently inflamed ones. Where such tonsils exist and where there is no clear evidence of some other focal infection, the need for tonsillectomy rests more upon whether there is evidence of systemic infection from some focus than upon the apparent condition of the tonsil itself. As a result of this attitude, we have been frequently rewarded by having the pathologist, after removal of the tonsils, find definite evidences of infection when clinical evidences of active inflammation were lacking.

At the present time, we have no more definite

clinical criteria of infection in the tonsils than I have outlined above. The demonstration of streptococci and other organisms on the surface or in the crypts of tonsils in clinical cases is conclusive only of their existence there. No certain means of securing uncontaminated cultures from the depth of tonsils, clinically, is known to the writer.

The case is very different as concerns the teeth and jaws. Here the dentist can, by proper heat and electricity tests, determine whether teeth are living ones or not; and the röntgenogram, with proper technic and experience, can give evidences suggestive of infective processes about the teeth or anywhere in the tissues of the jaw. The technic and details of röntgenographic study are matters for the technician, and a large experience is necessary before a properly qualified opinion can be expressed.

While the ordinary root abscess is easy of recognition, a great deal remains to be learned as to the significance of the minor grades of absorption about the roots. It appears to be true also that in many instances a focus of infection has been absorbed, and restitution of the tissues of the alveolar process has occurred, leaving a modified röntgenographic field. The nature and significance of these modifications still remains to be worked out.

It would appear to be a simple matter, once abscesses or infected teeth have been found, to decide what procedure should be adopted; but, on the one hand, the clinician, anxious to eradicate all foci of infection, demands that infected teeth be extracted: the dentist, anxious to retain the best occlusal surfaces and masticating mechanism for the patients, desires to remove only the infected tissues and retain as much as possible of the tooth. The application to each individual case should be determined, not by the physician alone, nor by the dentist alone, but by both together, giving proper consideration to the needs of the patient, the possibility of the dental procedures to eradicate all infection and still retain a masticating surface, and finally, the ability of the individual dental operator involved, so far as securing results is concerned.

Dentists have built up a marvelous mechanical perfection in crown and bridge work, but at the same time have developed conditions inviting infection of the alveolar process. Because so often free from local symptoms and signs, this infection has remained hidden until brought to light by the röntgenogram. The infection must be eradicated, but so far as possible, our patients must be spared the inconvenience and disability of artificial teeth, and the conservative dentist must learn so far as possible to eradicate the infection and spare the tooth. In this problem the physician has a vital interest.

One additional point needs particular attention by the physician. It is that, if extraction or other operative work is to be employed, care should be exercised not to overdo or to attack

too many foci at one time. In this field the infections are usually very chronic, and there is no urgent demand for the immediate eradication of all foci.

Two considerations demand that all foci should not be eradicated at once. The first is that in case vaccines or bacterins are needed, if all foci have been eradicated and attempts at cultivation of bacteria have failed or gone awry, material for culture can no longer be secured.

Secondly, the measures necessary for elimination of the infection frequently stir up and increase the infection at the time and there is considerable danger, particularly in heavily infected individuals, of opening up many channels of infection, of severe local reactions, sometimes with necrosis, and frequently of aggravating a multiple joint infection, or even an endocardial or myocardial involvement. These dangers are real, and we have had several illustrations of the folly of attempting to eradicate multiple foci at one time. Here again it is necessary that the physician and dentist confer and take fully into account such possibilities.

### Correspondence

New York City,  
November 19, 1915.

DR. JOHN COWELL MACEVITT,  
*Editor New York State Journal of Medicine:*  
Dear DR. MACEVITT:

On the editorial page of the November issue of the NEW YORK STATE JOURNAL OF MEDICINE is found an editorial preceding some correspondence forwarded to you by Dr. H. B. Bayles of Brooklyn. Dr. Bayles has forwarded the letters which were written to him from this office. He did not forward at that time the copies of the letters which he wrote to me in regard to this matter. I am taking occasion to send you copies of his letters which put a somewhat different light on the whole matter.

FIRST LETTER.  
Brooklyn, October 12, 1915.

DR. S. P. BEEBE,  
17 East 38th Street,  
New York City.

Dear DR. BEEBE:

I have a patient, 65 years old, suffering from a growth in the rectum (malignant?) which can be reached by examination of finger, presents a more or less ragged mass. Though he has lost 24 pounds in the last year he suffers no pain or discomfort but is annoyed by frequent passages of dark grumous material mixed with blood—constipation—appetite very good, physical condition better than nine months ago. Dr. William A. Downes examined him a year ago and pronounced it malignant (without microscopical examination) and inoperable. I feel that he should have the Autolysin treatment and I am writing you as to the particulars of that treatment. I have read many articles concerning it but am not sufficiently conversant with the doses, site of administration and reaction, to go ahead without further instructions. Where is it to be obtained? And the cost? Would it be necessary for you to see him? if you will kindly give me the necessary information concerning this matter I would appreciate it.

Very truly yours,  
(Signed) H. B. BAYLES.

In reply to the first letter, a copy of which you already have, I received the following letter:

Brooklyn, October 14, 1915.

DR. S. P. BEEBE,  
25 East 60th Street,  
New York City.

My dear Doctor:

Your letter received this A. M. Up to the present time my patient does not know of my move to institute any special treatment nor does he know, as far as I can learn without asking him outright, that he is suffering from a malignant disease. Therefore, I would like to know more definitely the cost of the treatment. He is not a man of means. I fully appreciate your stand as to the matter of instruction as to the administration of the treatment.

Very truly yours,  
(Signed) H. B. BAYLES.

In the letter which he has written to your office he states "I told him that the patient was suffering from carcinoma of the rectum, that the diagnosis had been confirmed by more than three physicians and that Dr. William A. Downes of New York City had considered it inoperable." It appears from his correspondence that this statement is incorrect. The doctor said nothing about diagnosis being confirmed by more than three physicians. He has a question mark after the term "malignant" in his letter implying a doubt in his own mind as to the diagnosis and further states that Dr. Downes examined him more than a year ago and at that time pronounced it malignant, without a microscopical examination, and inoperable. He furthermore states that his physical condition is better than nine months ago.

It appears to me that the information contained in his letter gives a somewhat different picture of the matter than he has given to you in his letter of November 4th, which you have printed. It furthermore appears to me that in view of the information contained in his letters to me directly that further examination to confirm the diagnosis is essential. Considering the doubt in his own mind implied in the question mark after the term "malignant" the possibly inadequate diagnosis made a year ago, coupled with the fact that the doctor states that the patient's physical condition is better now than it was nine months ago would lead me to believe that before I personally should want to advise or undertake treatment, a further examination would seem advisable. I question whether any physician would, under the circumstances given to me in his correspondence, be willing to say that there could be no question of diagnosis.

I am very sorry that Dr. Bayles appears to be aggrieved in this matter but in view of the fact that in his letter to you he has entirely misrepresented his correspondence with this office, I feel that a correction is desirable.

Very truly yours,  
S. P. BEEBE.

MASSACHUSETTS HOMEOPATHIC HOSPITAL,  
Boston, November 20, 1915.

DR. JOHN COWELL MACEVITT,  
Editor, *New York State Journal of Medicine*.  
Will you kindly insert in your Journal in some form that may seem suitable to you the following notice?

"The Evans Memorial for Clinical Research is desirous of coming into communication with as many physicians as possible who have used bacterial vaccines in the treatment of typhoid fever for the purpose of collecting statistics concerning the efficiency or non-efficiency of the method as a therapeutic measure. If any who have done this even with only one or a few cases will send their names and addresses, blank forms will be sent to them upon which uniform reports may be made. Due credit will be given to each in any reports that may be published.

Kindly address all communications to Dr. W. H. Watters, 80 East Concord St., Boston, Mass."

Very sincerely yours,  
FRANK C. RICHARDSON,  
Clinical Director.

## Notes from the State Department of Health

### SHALL NEW YORK STATE BE ADMITTED TO THE FEDERAL BIRTH REGISTRATION AREA?

The registration of births has been far behind the registration of deaths in this country owing to the fact that physicians and midwives have not been compelled by law to report the births attended by them. Some years ago the United States Census Bureau established a provisional birth registration area but it was known that the results included were imperfect and the attempt to collect birth statistics from the various states was discontinued after 1910.

The following announcement has been received from the Honorable Sam. L. Rogers, Director of the Census, relative to the establishment of a temporary birth registration area for 1915 and the beginning of a permanent birth registration area, in which the Census will be able to guarantee that the laws providing for the registration of births are thoroughly enforced, beginning with the year, January 1, 1916.

Washington, D. C., November 12, 1915.

My Dear Doctor WILBUR:

I have decided to establish a *temporary* registration area for births limited to the transcripts of the certificates of births registered for the year 1915 and returned to your office prior to March 1, 1916. Transcripts will be obtained from a selected list of states which possess laws substantially the same as the Model Law recommended by the Bureau of the Census, complying with the essential principles of birth registration, and which have been enforced for the year 1915 with such a degree of efficiency that the number of births registered exceeds to a reasonable extent the number of infants under one year of age as estimated from the latest enumeration of the population.

The *permanent birth registration area* will be organized for the year 1916 and will include only such states out of the number which may be included in the temporary birth registration area as shall give evidence to the Bureau of Census that they are uniformly and thoroughly enforcing the state law providing for the registration of all births which occur in the state within a definite interval of time as provided by said law, and with prosecution and enforcement of the penalty of the law for violation thereof either with respect to the failure to file births entirely or to file them within the time fixed by law.

I desire to advise you that this requirement will be rigidly enforced and to urge that, if you are not already doing so, you should make an effort to enforce the provisions of your law for the registration of births by actual infliction of the penalties contained therein, with records of fines, so that the Bureau of the Census may be fully informed as to the effectiveness of administration of the law.

The establishment of a permanent birth registration area, with uniform and thorough enforcement of the law, will mark the beginning of the first satisfactory statistics of births in the United States, and it is hoped that other states which may not be included in the temporary birth registration area or which, although included therein, may be rejected for the permanent birth registration area, will make an effort to procure such thorough enforcement of the law as is essential for the complete and prompt registration of births.

Full details with respect to the manner in which the transcripts are to be made and the compensation therefor will be supplied in a separate communication by Mr. R. C. Lappin, Chief Statistician for Vital Statistics.

Very truly yours,  
(Signed) SAM. L. ROGERS,  
Director of Census.

The State Department of Health has labored earnestly since the new Vital Statistics Law went into effect,

January 1, 1914, to procure the complete and prompt registration of births. It was found, however, that midwives, and more particularly physicians, disregarded the law and the request of the Department to comply therewith. For example, for May, 1915, there were no less than 1,675 tardy returns of births or 20.3 per cent of the total number registered. Of these 1,517 were due to delay or neglect on the part of 965 physicians and 158 cases due to corresponding delay or neglect on the part of 88 midwives. The attention of physicians and midwives was called to the requirement of the law through the agency of the press and by direct requests of district attorneys who were informed in regard to the condition of registration, and as a result, the number of delinquent returns diminished by over 50 per cent according to a comparison made for the month of September. The percentage for the latter month was only 13.1 as compared with 20.3 for May. This is far too high, however, and as indicated by the official notice from the Census Bureau, will prevent the admission of New York State to the registration area unless physicians and midwives are compelled to comply with the law. The following letter of instructions, therefore, which was prepared by the Commissioner of Health prior to the action of the Census Bureau, should be carefully noted by physicians as its provisions will be strictly followed out:

Albany, N. Y.

Dear Doctor WILBUR:

During the past year the Department of Health under your direction has made sincere and repeated efforts to acquaint practicing physicians, midwives, undertakers and local health officers and registrars with the provisions of the Vital Statistics Law, particularly in relation to the registration of births and deaths.

It is of the utmost importance that the vital Statistics of the State should be complete and accurate. Under the Public Health Law the duty is specifically imposed upon the State Commissioner of Health to enforce the provisions of this law. The Director of the United States Census has advised me that the State of New York will not be admitted to the birth registration area until the law requiring prompt filing of birth certificates is thoroughly enforced.

The Vital Statistics Law of New York State is based upon the model law drawn up by the representatives of the United States Census Bureau and a Committee of the American Medical Association, and is regarded by all those who are most competent to judge as perhaps the best law which has yet been enacted.

It is my duty and my purpose to enforce its provisions without discrimination; and I wish to hereby direct that after this date every violation be forthwith reported to the district attorney of the city or county in which the violation occurs for prosecution, with the reminder that the several district attorneys are specifically required by the law to prosecute when so requested by this Department. Where the violations are first violations and unintentional, I would suggest that the district attorney be requested to ask that only the minimum fine of \$5 be imposed. In this connection, I wish to say that in any instance in which the strict enforcement of the law works a hardship or an injustice, either in your judgment or that of the district attorney, or the officers of the court before whom the case is brought, in any primary violation I will personally pay the fine—but I wish the prosecution to be brought in every case whatever nature the violation may be.

Yours very truly,

HERMANN M. BIGGS,

Commissioner of Health, New York State.

Some 300 cases are now in preparation for transmission to the district attorneys of different counties in the State. Physicians will be given an opportunity to explain delay but only substantial reasons will be considered as excusing violation of the law.

CRESSY L. WILBUR,

Director, Division of Vital Statistics.

## Medical Society of the State of New York District Branches

### THIRD DISTRICT BRANCH.

ANNUAL MEETING, HUDSON, SEPTEMBER 28, 1915.

Meeting called to order at the Elks' Club, at 11 A. M. The first order of business was the consideration of the new By-Laws presented at the last meeting, which were passed as introduced without any change. The amendments which had been passed by the other District Branches being laid upon the table.

Amendments to the By-Laws were introduced to make the number of vice-presidents six, and to have the officers elected for only one year. These amendments will have to lie over for one year to be acted upon at the next annual meeting.

#### SCIENTIFIC SESSION.

President's Address. By Alvah H. Traver, M.D., Albany.

Address. By W. Stanton Gleason, M.D., President, Medical Society of the State of New York, Newburgh.

"Cocaine and Morphine Law." By Linsly R. Williams, M.D., Deputy Commissioner of Health, Albany.

"Carcinoma." By Richard Derby, M.D., Chief Surgical Clinic, St. Luke's Hospital, New York.

"The Intoxications." By Christopher J. Patterson, M.D., Troy.

"Papilloma of the Trachea from the General Practitioner's Standpoint." By Frank Keator, M.D., Kingston.

"Neurasthenia." By Louis Van Hoesen, M.D., Hudson.

## County Societies

### MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

110TH ANNUAL MEETING, AT NEW YORK ACADEMY OF  
MEDICINE, MONDAY, NOVEMBER 22, 1915.

The meeting was largely attended, there being over 700 members present.

The business portion of the meeting was devoted to receiving the report of the Comitia Minora which is composed of the Officers, Censors, Counsel and Committees.

These reports were all of vital interest, as they showed a remarkably live interest in the members, and a year of progress under the leadership of the President, Dr. Howard Lilienthal.

The annual report of the Treasurer, Dr. C. H. Richardson, was then read. It showed:

|                                    |            |
|------------------------------------|------------|
| Balance on hand Nov. 18, 1914..... | \$1,945.26 |
| Balance on hand Nov. 17, 1915..... | 3,285.66   |

An itemized account of receipts, disbursements, assets and liabilities will be mailed to each member of the Society.

The Committee on Membership reported that 136 members had been taken in during the year. The report of the Secretary showed that 2,045 had attended the meetings during the year, making an average of 228 at each meeting. The Society lost by death 30 members, by resignation, and removal from the County, 30; dropped for non-payment of dues, 31. The total gain in membership is 45. Total membership, 2,526.

The Committee on New Members have been exceedingly active during the fall campaign, and will have a remarkable showing for the year 1916.

The Milk Commission made a splendid report for the year.

The Counsel's report dealt in detail with the work

of the year, especially the raid on medical museums, and showed an unusually active year with much good accomplished.

The Board of Censors have considered 135 matters during the year.

Announcement was made with deep regret of the death of Dr. Edward S. Peck and Dr. John H. Huddleston, both members in active service on the Comitia Minora, and of the death of Dr. Frank H. Daniels, a member of the Committee on Legislation.

The Committee on Legislation had co-operated with the State Society and had succeeded in defeating pernicious legislation and in aiding legislation favorable to the interests of the profession of the State. An urgent call was made for the co-operation of the profession for the coming year as there is still greater need of effort by the profession in this most important work.

The following officers, censors and delegates were elected, and will be ratified at the Adjourned Annual Meeting to be held December 27th:

President, Frederic E. Sondern; First Vice-President, J. Bentley Squier; Second Vice-President, Charles H. Peck; Secretary, John Van Doren Young; Assistant Secretary, Daniel S. Dougherty; Treasurer, Charles H. Richardson. Censors—Howard C. Taylor, Willy Meyer, Floyd M. Crandall. Delegates to the State Society—John Van Doren Young, Brooks H. Wells, Alexander Lyle, J. Bentley Squier, Orrin Sage Wightman, Harold Hays, Nathan E. Brill, Ward B. Hoag, Daniel S. Dougherty, Lewis F. Frissell, Ralph Waldo, Ernest E. Smith, George W. Kosmak, Calvin S. May.

An interesting scientific programme was held as a part of the evening's work.

SUFFOLK COUNTY MEDICAL SOCIETY.

ANNUAL MEETING AT RIVERHEAD, N. Y.,

October 28, 1915.

The one hundred and ninth annual meeting was called to order in the Griffin House, at 11 A. M., with 40 members and 7 guests present. President B. F. Many in the chair.

The minutes of the last meeting were read and approved.

The report of the comita minora was given by the secretary.

The following committee on the nomination of officers was appointed by the chair: Drs. Ross, Terry and Loper.

Dr. M. B. Heyman, Chairman of the Board of Managers of the County Tuberculosis Hospital, reported that the buildings were about half completed and that the managers expected to have the hospital in operation sometime during the coming winter.

On motion of Dr. Moore, the Committee on Tuberculosis Hospital was discharged with the thanks of the Society for its efficient work.

The following doctors were proposed for membership: Dr. LeRoy B. Vail, Riverhead, Columbia, 1908, proposed by Drs. J. H. Benjamin and A. E. Payne; Dr. George S. Reitter, Westhampton Beach, Albany Med. Coll. 1915, proposed by Drs. N. S. Wadhams and Frank Overton; Dr. J. H. Marshall, Southold, N. Y. Univ. 1887, proposed by Drs. J. M. Hartranft and C. C. Miles.

The censors reported favorably on the applications and the three applicants were unanimously elected to membership.

The Committee on Officers made the following nominations: President, John Nugent, Southampton; Vice-President, F. E. Benjamin, Shelter Island; Secretary, Frank Overton, Patchogue; Treasurer, B. D. Skinner, Greenport. Censors: M. B. Lewis, Sag Harbor; Walter H. Sanford, Kings Park; A. C. Rice, Babylon. Delegates to the State Society: M. B. Heyman, Central Islip; Frank Overton, Patchogue; alternates, B. F. Many, Port Jefferson; W. B. Savage, East Islip.

The secretary reported that he had urged the Board of Supervisors to provide better medical facilities at the Children's Home and Almshouse.

On motion, the president appointed Dr. W. Hugh Ross, Dr. A. G. Terrell, and Dr. A. C. Loper a committee to investigate the medical needs of the Almshouse and Children's Home, and the present their recommendations to the Board of Supervisors.

Dr. W. R. Townsend, Secretary of the Medical Society of the State of New York spoke of the work which the State Society was doing to uplift the medical profession and to promote efficiency in the practice of medicine.

Dr. F. M. Meader, Chief of the Division of Communicable Diseases of the State Department of Health, spoke of the desire of his department to place the diagnostic facilities of the State at the disposal of all the practising physicians of the County.

Dr. B. F. Many gave the president's address, suggesting means for improving the efficiency of the Society.

On motion of Dr. Moore, the thanks of the Society were given to Dr. Many for his active and efficient services as president.

Dr. Paul M. Pilcher of Brooklyn, gave a paper on "Tumors of the Breast, their Diagnosis and Treatment," and dwelt on the necessity of prompt removal of the breast in every case of tumor of the breast.

Dr. Louis C. Ager, of Brooklyn, gave a paper on the "Signs of Incipient Tuberculosis," and demonstrated the signs on three patients from the Medford Sanatorium. He showed that the first sign of tuberculosis was usually an enlargement of the mediastinal glands, and that this caused the bronchial voice and breathing to be heard along the spine below the level of the cervical vertebrae. Normally no breathing or voice sounds can be heard over the spine below the cervical vertebrae.

Dr. Alan G. Terrell, of Riverhead, spoke on the "Modern Method of Vaccination," and demonstrated the method on three patients. The method is first, cleanse the arm with alcohol; second, place a drop of vaccine on the skin; third, make a single scratch one-quarter inch long with a needle through the vaccine.

On motion, the secretary was instructed to send a printed copy of the minutes to each member of the Society.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

REGULAR MEETING, ALBANY, N. Y.

SCIENTIFIC SESSION.

"A Case of Conjunctival Tuberculosis. Demonstration of patient and inoculated rabbit." Arthur J. Bedell, M.D., and Ellis Kellert, M.D., Albany, N. Y.

Demonstration of Apparatus, (a) Microsaccharimeter for the estimation of the sugar content of the blood. (b) For the determination of the Carbon Dioxid content of the alveolar air as an index of Acidosis. James R. Rooney, M.D., Albany, N. Y.

Lantern Slide Demonstration of Infection of the Vera Montanum. James N. Vander Veer, M.D., Albany, N. Y.

MEDICAL SOCIETY OF THE COUNTY OF SUFFOLK.

ANNUAL MEETING, RIVERHEAD, N. Y.,

Thursday, October 28, 1915.

SCIENTIFIC SESSION.

"President's Address," by Bradley F. Many, M.D., Port Jefferson, N. Y.

"The Signs of Incipient Tuberculosis. A Clinical Demonstration with Patients from the Medford Sanitarium," by Louis C. Ager, M.D., Brooklyn.

"Tumors of the Breast, Their Symptoms and Treatment," by Paul M. Pilcher, M.D., Brooklyn, N. Y.

"Modern Vaccination. A Demonstration with Cases," by Alan G. Terrell, M.D., Riverhead.

MEDICAL SOCIETY OF THE COUNTY OF  
STEBEN.

ANNUAL MEETING, BATH, N. Y.,

Tuesday, October 12, 1915.

The following officers were elected for the ensuing year:

President—Leon M. Kysor, Hornell.  
Vice-President—Frank S. Swain, Corning.  
Secretary-Treasurer—Burtis R. Wakeman, Hornell.  
Censors—Albert A. Aldrich, Addison; Herbert B. Smith, Corning; Roy Dunham, Hornell; Floyd L. Spaulding, Cohocton; Otto K. Stewart, Canisteo.  
Delegate to State Society—William E. Barron, Addison.  
Alternate—Burtis R. Wakeman, Hornell.  
Chairmen Standing Committees—Membership, Henry J. Wyncoop, Bath; Red Cross, Leon M. Kysor, Hornell; Legislation, Otto K. Stewart, Canisteo; Public Health, John A. Conway, Hornell; Local Arrangements, Herbert B. Smith, Corning.

## SCIENTIFIC SESSION.

Vice-President's Address. "Some Phases of the Cancer Problem," by L. M. Kysor, M.D., Hornell.  
Committee on Vice-President's Address: O. K. Stewart, M.D., Canisteo; R. C. Hill, M.D., Bath; E. T. Gregory, M.D., Arkport.

"Oral Sepsis," by John S. West, D.D.S., Elmira.  
Discussion, A. J. Stiker, D.D.S., Addison.

"Experiences in a French Military Hospital," by R. M. Eaton, M.D., Wellsville. Discussion, C. R. Phillips, M.D., Hornell.

"Conservatism in Medicine and Surgery," by J. L. Miller, M.D., Corning. Discussion, H. B. Smith, M.D., Corning.

"Steben's Opportunity," by Chas. S. Prest, M.D., Waterford. Discussion, F. S. Swain, M.D., Corning.

"Syphilis in the New-born," by Roy Dunham, M.D., Hornell. Discussion, H. J. Wynkoop, M.D., Bath.

"Duodenal Ulcer," by H. P. Jack, M.D., Hornell. Discussion, J. G. Kelly, M.D., Hornell.

"The Problem of the Typhoid Carrier," by B. R. Wakeman, M.D., Hornell. Discussion, S. H. Bennett, M.D., Greenwood.

Next meeting (semi-annual), Corning, Tuesday, May 30, 1916.

## CLINTON COUNTY MEDICAL SOCIETY.

ANNUAL MEETING AT PLATTSBURG, N. Y.

November 16, 1915.

The meeting was called to order at 12.30, the first session being a social one held in the dining room of the Arcade. There were 35 present.

The meeting then adjourned to the Plattsburg Club for the Business Session.

The following officers were elected for 1916: President, Leo F. Schiff, Plattsburg; Vice-President, Warren H. Everett, Peru; Secretary, T. Avery Rogers, Plattsburg; Treasurer, Jefferson G. McKinney, Plattsburg; Censors: William E. Clough, Plattsburg; Frank M. Holcombe, Keeseville; William U. Taylor, Mooers. Delegate to State Society: Robert S. Macdonald, Plattsburg.

## SCIENTIFIC SESSION.

"The New Explanation of the Genesis of Pulmonary Tuberculosis with X-ray plate demonstration," by A. H. Garvin, M.D., Supt. Ray Brook State Hospital.

"Military Surgeons in War Time," by T. E. Darby, M.D., Surgeon U. S. Army.

"The Dairy and Disease," by John A. Smith, Saranac Lake, N. Y.

"Personal Experiences in the American Ambulance, Paris," by Lyman G. Barton, Jr., Willsboro, N. Y.

Medical Directory of New York, New  
Jersey and Connecticut

CORRECTIONS.

Examiners in Lunacy:

Page 746. Add Spitzka, Edward Anthony.

Page 744. Byrne, J., should be J. H. (Joseph Henry.)

Page 135. Molina-de St. Remy, Antonio Hostos, Telephone 2925 Schuyler.

## 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 OPERATIONS OF SURGERY (Jacobson) Sixth Edition, by R. P. ROWLANDS, M. S., Lond., F.R.C.S., Eng., Surgeon to Guy's Hospital, Lecturer on Anatomy to the Medical School and PHILIP TURNER, B.Sc., M.S., Lond., F.R.C.S., Eng., Surgeon to Guy's Hospital; Teacher Operative Surgery to Medical School, with 797 illustrations, (40 in color). Vol. I., The Upper Extremity; The Head and Neck; The Thorax; The Lower Extremity; The Vertebral Column. Vol. II., The Abdomen. New York, The Macmillan Co., 1915.

MANUAL OF SURGERY. By ALEXIS THOMSON, F.R.C.S., Ed. Professor of Surgery, University of Edinburgh, Surgeon Edinburgh Royal Infirmary and ALEXANDER MILES, F.R.C.S., Ed., Surgeon Edinburgh Royal Infirmary, Vol. I, General Surgery, Fifth edition revised and enlarged with 289 illustrations. Vol. II, Regional Surgery, Fifth edition revised and enlarged with 301 illustrations, Edinburgh, Glasgow and London. Henry Frowde and Hodder & Stoughton, 1915. Oxford University Press, 35 W. 32nd St., N. Y. City.

THE STRETCHER BEARER. A companion to the R. A. M. C. Training Book, illustrating the Stretcher Bearer Drill and Handling and Carrying the Wounded. By GEORGES M. DUPUY, M.D., Stretcher-Bearer Ambulance Section C (Norwood) Co., Lambeth Battalion V. T. C. London, Henry Frowde, Hodder & Stoughton. Oxford University Press, 35 W. 32nd St., N. Y., 1915.

INJURIES OF JOINTS. By ROBERT JONES, Ch.M., F.R.C.S., (E. & I.), Director of Military Orthopedic Hospital, Liverpool, Consulting Surgeon to Queen Mary's Convalescent Auxiliary Hospitals; Major R.A.M.C. (T. F.), London. Henry Frowde, Hodder & Stoughton, Oxford University Press, 35 W. 32nd St., N. Y., 1915.

WOUNDS IN WAR, THEIR TREATMENT AND RESULTS. By D'ARCY POWER, M.B., Oxon., F.R.C.S., Eng. Surgeon to and Lecturer on Surgery at St. Bartholomew's Hospital; Lieut. Col. R.A.M.C., (T. F.), London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W. 32nd St., N. Y. City.

SURGERY OF THE HEAD. By L. BATHE RAWLING, M.B., B.C., (Cantab), F.R.C.S. (Eng.), Surgeon and Senior Demonstrator of Operative Surgery St. Bartholomew's Hospital; Major R.A.M.C. (T.F.), London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W. 32nd St., New York City.

NERVE INJURIES AND SHOCK. By WILFRED HARRIS, M.D., (Cantab), F.R.C.P. (Lond.), Physician St. Mary's Hosp., London, and Hosp. Epilepsy and Paralysis, Maida Vale. London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W. 32nd St., New York.

WOUNDS OF THE THORAX IN WAR. By J. KEOUGH MURPHY, M.C., (Cantab), F.R.C.S., Surgeon Miller General Hospital, South East London, and Paddington Green Children's Hospital, No. 1. London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W. 32nd St., New York.

CEREBRO-SPINAL FEVER. By THOMAS J. HORDER, M.D., Assistant Physician St. Bartholomew's Hospital, Major (Temp), R.A.M.C., Serving with the British Expeditionary Force. With 17 illustrations. London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W 32nd St., New York City.

MEDICAL HINTS For the Use of Medical Officers Temporarily Employed with Troops. By J. EDWARD SQUIRE, M.D., (Lond.), F.R.C.P., D.P.H., (Camb.), Consulting Physician Mt. Vernon Hosp. for Diseases of the Chest, etc. London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W. 32nd St., New York.

ABDOMINAL INJURIES. By RUTHERFORD MORISON, Professor of Surgery Durham University, Senior Surgeon Northumberland War Hospital, and W. G. RICHARDSON, M.B., F.R.C.S., Lt. Col., R.A.M.C., (T.), 1st Northern General Hospital and Surgeon Royal Victoria Infirmary, Newcastle-upon-Tyne. London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W. 32nd St., New York City.

GUNSHOT INJURIES OF BONES. By ERNEST W. HEY GROVES, M.D., M.S., (Lond.), F.R.C.S., (Eng.), Surgeon Bristol General Hospital, Consulting Surgeon Cosham Hospital, Captain R.A.M.C., (T.). London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W 32nd St., New York.

PRACTICAL PRESCRIBING AND TREATMENT IN THE DISEASES OF INFANTS AND CHILDREN. By D. M. MACDONALD, M.D., F.R.C.P.E. London. Henry Frowde, Hodder & Stoughton, 1915. Oxford University Press, 35 W. 32nd St., New York City.

MEDICAL AND VETERINARY ENTOMOLOGY. A Textbook for use in schools and colleges as well as a handbook for the use of physicians, veterinarians and public health officials. By WILLIAM B. HERMS, Associate Professor Parasitology University California, Consulting Parasitologist California State Board of Health. The Macmillan Co., New York, 1915. Price, \$4.00.

PRACTICAL CYSTOSCOPY AND DIAGNOSIS SURGICAL DISEASES OF THE KIDNEYS AND URINARY BLADDER. By PAUL M. PILCHER, M.D., Consulting Surgeon Eastern Long Island Hosp. Second edition thoroughly revised and enlarged. Octavo, 504 pp., 299 illustrations, 29 in colors. Philadelphia and London: W. B. Saunders Co., 1915. Cloth, \$6.00 net; half morocco, \$7.50.

THE MEDICAL CLINICS OF CHICAGO. Volume I, Number III (November, 1915). Octavo of 200 pp., 23 illustrations. Philadelphia and London: W. B. Saunders Co., 1915. Price per year: paper, \$8.00; cloth, \$12.00.

POST-MORTEM EXAMINATIONS. By WILLIAM S. WADSWORTH, M.D., Coroner's Physician, Philadelphia. Octavo volume, 598 pp., 304 original illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$6.00 net; half morocco, \$7.50 net.

BONE-GRAFT SURGERY. By FRED H. ALBEE, M.D., F.A.C.S., Professor Orthopedic Surgery New York Post-Graduate Medical School and the University of Vermont. Octavo volume, 417 pp., 332 illustrations, 3 in colors. Philadelphia and London: W. B. Saunders Co., 1915. Cloth, \$6.00 net; half morocco, \$7.50 net.

COLON HYGIENE. Comprising new and important facts concerning the physiology of the colon and an account of practical and successful methods of combating intestinal inactivity and toxemia, J. H. Kellogg, M.D., LL.D., Superintendent Battle Creek Sanitarium. Good Health Publishing Co., 1915.

## In Memoriam

JOHN HENRY HUDDLESTON, M.D.

Resolutions Read and Adopted at the Annual Meeting of the Medical Society of the County of New York, November 22, 1915.

In the death of Dr. John Henry Huddleston this Society has lost a member who enjoyed the respect and affection of all who were privileged to know him.

His life was an illustration of what a strong and yet tenderly gentle personality can accomplish.

From his earliest youth he was pre-eminently a scholar. To him the degree of Doctor of Medicine was only an introduction to the study of medicine, and particularly to its possibilities in the prevention and relief of suffering.

His activities were many and while rewarded with appreciative recognition, most of his great energy was concentrated on the things that help humanity and the advancement of science rather than on the acquisition of public honors or material advantages.

He was distinctly an idealist and optimist and helped many to preserve their faith and renew their store of courage.

The deeds of such a man do not die with him and John Huddleston's life and devotion to duty furnish us an inspiration to lead the better life of which he gave us a so perfect example.

Resolutions passed at the Meeting of The New York Academy of Medicine, November 4, 1915:

"The New York Academy of Medicine has learned with sincere sorrow of the untimely death of Dr. John H. Huddleston.

"For three years Assistant Secretary, ten years Recording Secretary, and for the last three years Trustee of this Institution, Dr. Huddleston served the Academy of Medicine in the whole-hearted, faithful way in which he did everything which came to his hand, performing not only the regular duties of his office but giving much time, thought and energy to the many Committees on which he was appointed.

"His lovable personality and genial manner endeared him to those Fellows with whom he was brought into intimate contact, while his scholarly attainments and broad grasp of the principles of Medical Science commanded the respect of the whole Academy.

"To the Trustees and to the Council his sound judgment and firmness of character were of inestimable value, while their deliberations were enlivened by his genial companionship.

"In his death this Academy and the Medical Profession have suffered a great loss, and it is but fitting that we record the affection and esteem which we felt for Dr. Huddleston, by spreading this resolution on our minutes and sending a copy to his family and to the medical press."

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## Deaths

HARRY W. BARBER, M.D., Rochester, died November 2, 1915.

VALENTINE BROWNE, M.D., Yonkers, died November 19, 1915.

NORTON JEROME SANDS, M.D., Port Chester, died November 13, 1915.

EDWARD LIVINGSTON TRUDEAU, M.D., Saranac Lake, died November 15, 1915.

Major A. VEEDER, M.D., Lyons, died November 16, 1915.

THOMAS A. WASSON, M.D., Elizabethtown, died November 12, 1915.

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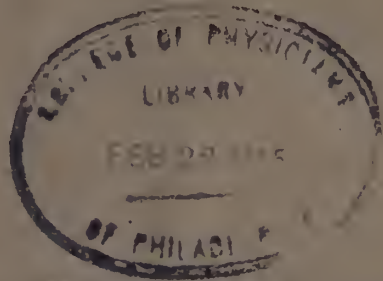
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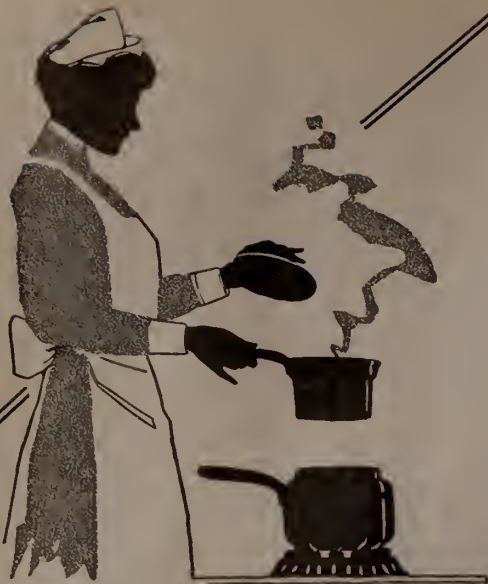
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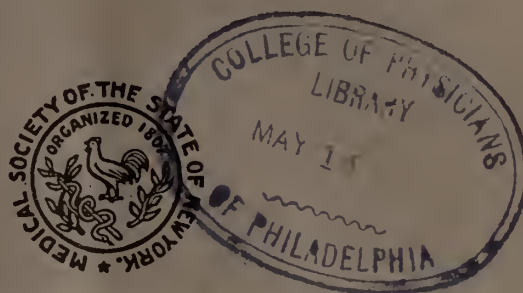
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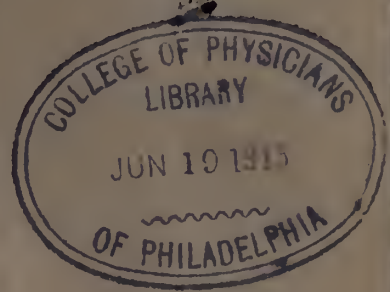
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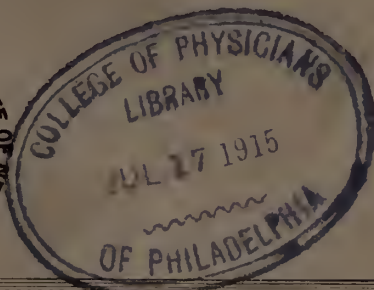
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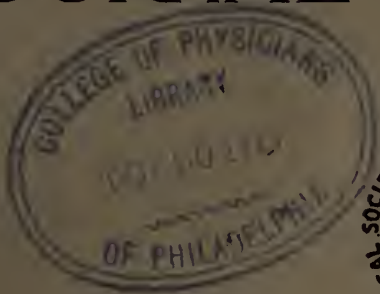
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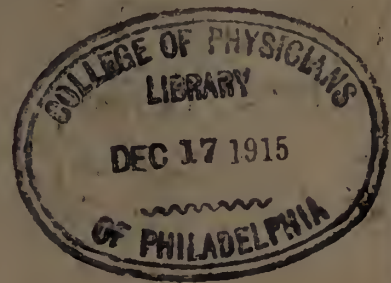
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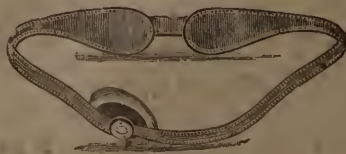
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