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ORIGINAL ARTICLES.

PUS IN THE PELVIS.

BY GEORGE MC NAUGHTON, M.D.

Any inflammatory disease which involves a pelvic organ may lead to the formation and storage of pus in the pelvis, thus including conditions known as pelvic peritonitis, salpingitis, parametritis, perimentritis, ovaritis and cellulitis.

These structures are so intimately connected anatomically, that for practical purposes, it is not necessary to distinguish them.

It is fair to state that the presence of a cellulitis presupposes a peritonitis (circumscribed), and that the reverse is true may be accepted without much question. The same may be stated of a salpingitis or a perisalpingitis.

Pain is the symptom which first directs the patient's attention to her pelvis; as a rule this means a localized peritonitis, an inflammation of that serous membrane being the principal cause of subjective symptoms present in pelvic inflammations. Pelvic abscess is simply an advanced stage of these inflammations.

A consideration of the pathology, and a reasoning from cause to effect will aid in an appreciation of the condition and, perhaps, suggest the proper treatment.

Most of these inflammatory diseases in women originate from a common point, and separate infections are few. Therefore it makes practically but little difference whether one tissue or another is involved first, the result may be the same.

These inflammatory invasions may be very slight, finally interfering very little with the organ or organs attacked; or they may be so virulent as to cause the death of the individual within a few hours.

Again, the most extreme final result (short of a fatal issue), in which the patient continues to live with the external appearance of health, yet sterile and liable to repeated attacks of pelvic inflammation, may ensue; pains may be present to a greater or less degree, the sexual relations unsatisfactory, each menstruation accompanied by disability lasting one to four days. Between these mentioned conditions may be found all grades, but a continuance of these symptoms for a short time indicates, in many women, whose nervous systems are not at best too stable, a train of nervous manifestations that are familiar to all.

The primary causes of pelvic inflammation, with few or no exceptions, are septic or specific infections, therefore preventable in most instances. Neoplasms, it is true, may be the cause of pelvic inflammation, but usually this is by infection transmitted by means of the neoplasm. Traumatism, of itself, rarely causes inflammation in the pelvis.

These diseases are rare in young girls before puberty. It is probable that the recurring pelvic congestion, incident to menstruation, favors the reception of infectious material.

In 99 cases, tabulated by Bernutz, 43 occurred in puerperæ, 28 after gonorrhea, 20 during menstruation, 8 followed traumatism, 3 venereal excess, 2 syphilitic disease of cervix, 2 were caused by the introduction of uterine sounds, 1 by a vaginal douche.

A little consideration of this report might lead one to almost any conclusion as to the cause; perhaps a fair proportion of the puerperal cases may have been gonorrhea.

The twenty that occurred during menstruation also excite our interest for, surely, menstruation alone will not cause pelvic inflammation. Even menstrual suppression, due to exposure, which we frequently hear about, but rarely see, would hardly cause pelvic inflammation. In regard to the eight traumatic cases, three of which were put down as due to venereal excesses, the very fact of excess suggests ways of infection. Two cases of syphilitic disease of the cervix might also make one suspicious of a mixed infection. Infection by means of the uterine sound may be promptly accepted as a direct cause of quite a proportion of cases. This class may include not a small number who are infected by means of douche tubes, and other mechanical appliances so generally used by women.

It does not require a vivid imagination to appreciate the fact that a woman may receive infec-

tion, not gonorrheal, from the male organ. I fancy this may explain a number of the cases.

Within the month I have seen two puerperal cases of pelvic infection, which were, in my opinion, due to infection (not specific, in the usual sense of the term) received during sexual intercourse. In the majority of instances the first lesion of gonorrhea is found in the urethra and, in many cases it remains there the longest time. The endometrium is next frequently involved, often without a vaginitis. This point should be remembered in searching for the gonococcus. The normal secretion of the vagina makes the lodgment of the gonococcus difficult. The endometrium and the mucous lining of the Fallopian tube are practically the same anatomically, and the specific inflammation is carried, sometimes, very rapidly into the tube.

It is rare to find evidences of gonorrheal inflammation in the anterior surface of the broad ligament. In the puerperal cases where the primary lesion is in the vagina or perhaps in the vulva, the channel of invasion may be somewhat different. The lymphatics in this case being the carriers of the poison.

If the infection which is conveyed by the endometrium be very virulent, the peritoneal cavity may be invaded by extension, and a suppurative peritonitis result, which (under these circumstances) is usually fatal.

Whatever be the source of the infection, the result is quite the same. When the tissues become involved there is congestion, followed by rapid effusion.

At this stage, depending, perhaps, upon the virulence of the infection, or for other reasons not understood, resolution may take place, and the tissues return to a nearly normal condition. If resolution, however, does not take place, the process continues to suppuration. Nature takes care of many of these cases by sealing the pelvic end of the Fallopian tube, thus preventing a direct outpouring of infected material into the free cavity of the peritoneum.

Nature may also seal the uterine end of the tube, in this way making the familiar sausage-shaped tumor. Subsequently the tube walls become inflamed, and the inflammatory process is extended to the contiguous structure, the peritoneal covering of the tube becomes inflamed; lymph deposits occur, making a barrier which effectually protects the general peritoneum. Sometimes a Fallopian tube will have the general appearance of being normal, while a section, examined microsopically, will disclose the presence of a suppurative process, which may be extended, should the proper irritant appear. Or the process may not extend, and the tube is left in a thickened condition, capable of performing its function, perhaps, but not in normal way; its condition, inviting the accident of ectopic gestation, or perhaps the more serious accident of setting free infected material at the time of labor, after a successful pregnancy. One tube may be capable of transmitting the ova, while the other is sealed; the latter, of course, liable to rupture with the dangers which accompany that accident. Should the inflammation involve the deeper or connective tissue, an effusion takes place which distends the meshes of the connective tissue to its fullest extent. This may, like the effusion previously referred to, resolve, and the parts resume their normal condition. But if this becomes infected from an adjoining structure, suppuration takes place. Then we have to deal with a pelvic abscess of the most familiar type. If this be allowed to remain untreated the wall will become necrotic and break through at the point of least resistance—perhaps the most likely point will be the rectum. These abscesses have been known to find an exit in almost any direction—rectum, bladder, uterus, vagina and peritoneal cavity. Fortunately, at the present time the alert practitioner detects the presence of pus and determines its avenue of exit.

Ovarian abscess in most instances is due to the extension of a salpingitis, the tube attaching itself to the ovary, infecting and usually destroying it. Hydrosalpinx is also one of the results of pelvic inflammation, which may succeed the ordinary effusion, a tubal hemorrhage, or possibly a pyosalpinx. Occasionally the suppuration is confined to the tube, the pelvic end is effectually closed, and the uterine end partly so; the increased pressure of its contents causes a break to occur at the point of least resistance, which may be at the uterine extremity. The contents in this way are discharged into the uterus. This takes place at varying intervals, by which the pressure is relieved, and the patient experiences so much relief that the condition is bearable and continues so for an indefinite period.

Pelvic abscesses of appendiceal origin deserves more than passing notice, because of its frequency, and the fact that in many cases it is not diagnosed.

We may imagine an appendicitis starting in manner similar to that of a Fallopian tube inflammation, by an extension from the cæcal mucous membrane. Congestion takes place and subse-

quently an effusion, or the process may stop and the disturbance subside. If it continues, however, precisely the same anatomical changes take place, as have been mentioned in the case of the tube. A limited peritonitis occurs, a fibrinous exudate is deposited, limiting the inflammation and septic process to the cæcal neighborhood.

A viscera being the subject of peritonitis with a fibrinous exudate, is liable to attach itself to any peritoneal surface with which it is brought in contact. This is the reasonable explanation of the pelvic abscesses of appendiceal origin. The tip of the appendix, perhaps, attaches itself to a portion of the pelvic peritoneum and the subperitoneal connective tissue, by this means, becomes the seat of a septic inflammation, which finally results in the formation of a pelvic abscess.

A double abscess has been known to occur—one in the true pelvis and one in the iliac fossa.

Under such conditions it would be very easy to overlook either, according to the sex of the patient and the method of examination. Surgeons sometimes are too likely to find one cause of trouble, content themselves with attending to that, and neglecting other conditions that may be very near at hand as, for instance, failing to examine the appendix vermiformis. When operating for diseases of, or accidents involving, the Fallopian tubes, I have several times found this complication.

Likewise one might remove the appendix without discovering the presence of pus, either in the iliac fossa or the true pelvis, for the connecting sinus is not always discovered. Intestinal agglutination may be great enough to quite conceal the presence of a considerable amount of pus in either the false or true pelvis.

Having determined the presence of pus in the pelvis, how shall the case be treated?

Few practitioners at the present time would advocate waiting for Nature to take her course. Up to this point Nature has maintained her reputation for conservatism, but from this point, if left alone, experience teaches the outcome may be unfortunate. As has been stated, a pelvic abscess may empty itself in almost any direction, most frequently through the rectal wall. Such an opening often perpetuates the suppurative process, because the drainage is imperfect. The presence of a collection of pus anywhere in the body indicates its removal if it can be reached. The point of evacuation should be the most dependent, to secure the best drainage. These two points are so generally accepted that the mention of them is quite unnecessary. If, then, we have to deal with a circumscribed collection of pus in the pelvic cavity, what is the most reasonable method of procedure?

The indications are plain. Nature has walled off the free peritoneum. She has also furnished an avenue of approach that is quite safe in the female, and one that is fairly safe in the male. All cases of pus collection in the lower pelvis of women can be best reached through the vagina, whatever the age of the patient. The vagina is a natural slit which reaches up in the neighborhood of the abscess, and most frequently it represents the lowest part of the abscess cavity.

Methods of securing drainage, tubes, gauze, or whatever may be selected, may be introduced, and drainage can always be maintained from this point. Some surgeons regard this as an improper surgical procedure, inasmuch as they believe the origin of the trouble cannot be or is not reached. They maintain that the original focus should be dealt with; when, in fact, the real point of origin may have recovered.

The danger is always less when approached from below. Of scores of cases treated in this way, I can recall but one that developed serious symptoms afterward. This was a bowel obstruction due to intestinal attachment to the broad ligament. It is a fact, however, that a second operation has been sometimes required, even a subsequent laparotomy has sometimes to be done.

It is the contention of the writer of this paper that all these cases, in either sex, should be evacuated from below, and that the surgeon should invariably avoid the destruction of the barrier between the clean peritoneum and the infected abscess cavity.

If, unexpectedly, the surgeon discovers the presence of pus after entering a clean portion of the peritoneal cavity, he would better tap from below, diminish the tension, and likewise lessen the danger of general infection; thus dealing with the primary point of infection as seems best. This especially applies to abscess of appendical origin.

In the November, 1906, *Laryngoscope,* a paper by Drs. S. H. Large and Edgar D. Brown details the results of experiments in administering ethyl chloride to animals. The conclusions are that ethyl chloride is rapid in action, causing little struggling; that it is not necessary to abolish the reflexes to establish insensibility to pain; like chloroform it causes a lowering of blood pressure; it first stimulates, then paralyzes the respiratory centre; it is practical as a general anesthetic for short operations and as a preliminary to ether and chloroform, but is not without actual danger when the administration is prolonged.

SURGERY OF THE FEMALE PELVIC FLOOR.

BY CHARLES JEWETT.

The female pelvic floor with its surgical problems might well be brevetted the *pons asinorum* of the gynecologist. Its surgical anatomy, the nature of its obstetric injuries and the rationale of their repair are questions long in dispute and their solution seems still remote. Despite the ingenuity which has been expended upon operative methods, surgical results often are notably bad. A large proportion of child-bearing women bear witness to the unsatisfactory character of many of the commonly employed plastic procedures.

The existing confusion of opinion and practice in matter of these injuries finds its explanation in the widely differing conceptions of the mechanics of the pelvic floor, of its anatomy and of the nature of the obstetric lacerations. These questions may first be considered in detail.

Mechanics. The pelvic diaphragm guards the outlet of the pelvis against prolapse of viscera by resisting intraabdominal pressure. It antagonizes the midriff and the abdominal muscles. It contracts when the opposing muscles contract and relaxes when they relax. When intact it maintains the equilibrium of the pelvic contents. When its integrity is lost equilibrium is impaired or destroyed and displacement ensues.

Much discussion has arisen concerning the relative importance of muscle and fascia in their relation to the supporting function of the pelvic floor. Browning holds that the strength of the septum is dependent solely upon its strong fascial framework. In defense of this view he observes that it is unphysiologic for a muscle to act continuously. Dudley, who has given us one of the best modern works on gynecology, expresses himself in similar terms.

On the contrary, Dr. M. L. Harris contends that the muscles are the only factors to be considered in the strength of the floor. He declares that the pelvic diaphragm depends for its support absolutely on the practically continuous activity of the intact muscles which enter into its formation and that the fasciæ are merely adjuncts to the muscles and in themselves entirely inadequate to give the support required. Reasoning from analogy he points out that notwithstanding the strong ligaments which bind the vertebræ together, scoliosis follows when the muscles on one side of the back are paralyzed or weakened and that the ligaments of the arch of the foot and the plantar fascia are known to yield in paralysis of certain leg muscles.

Webster regards the fascial sheets as the chief agents in resisting intraabdominal pressure, the muscular structures contributing additional strength.

The sweeping statements of both Browning and Harris are too radical Since the intraabdominal pressure is a varying quantity, the resistance of the pelvic diaphragm must vary accordingly. It must relax and contract to meet the changing tension of pelvic contents. Its ability to maintain the equilibrium must depend upon the muscular, not upon the fibrous elements of its make-up.

It would seem rational, therefore, to look upon the muscles as of first importance, the aponeurotic coverings and tendinous attachments being indispensable to their strength and efficiency.

Anatomy. Strangely enough there is no general agreement with reference to the anatomy of the levator ani muscles, the most essential constituents of the pelvic diaphragm. It is very generally assumed that the fibers of the levators run transversely, forming muscular loops behind the vagina and the rectum. This is common teaching even in recent text-books. In a voluminous work just issued muscle fibers of the levator are made to encircle the posterior borders of the urethra, the vagina and the rectum. Many of the current operative procedures are based upon this misconception.

A few years ago the late Professor Browning undertook an extended series of dissections at the Long Island College Hospital, both in the human subject and in the lower animals, with a view to a more definite knowledge of the levator anatomy. While at the time of his death certain minor points had not been fully worked out the main features were definitely established. Two dissections recently placed at my disposal by Prof. Wm. F. Campbell, Dr. Browning's successor in the Chair of Anatomy, have aided in clearing up details. Our findings correspond substantially with the description of Savage and the more recent ones of Webster, of Spalteholtz and of Sellheim. I may be permitted to recount briefly so much of the anatomy of the levator and of other elements of the pelvic floor as may be essential to our purpose.

Fascia and muscle, though inseparable functionally, may be described separately.

Fascia. From the pelvic walls the two lateral halves of the rectovesical fascia course downward and inward toward the median line with little bellying. Their sweep is sharply downward anteriorly, less so posteriorly. Except where per-

forated by the urethra, the vagina, and the rectum, they blend intimately in the middle line. The shape of this fascia resembles a flattened funnel with its lowermost point in close relation with the external sphincter ani. Three leaflets given off from the rectovesical fascia, as described by Webster, sustain a very important relation to pelvic floor lacerations. One passes between the bladder and the lower portion of the anterior vaginal wall. Another extends between the posterior vaginal wall and the rectum, being continuous below with the connective tissue of the perineal body. The third layer passes behind the lower portion of the rectum and is firmly united with it. These leaflets, Webster believes, "are of

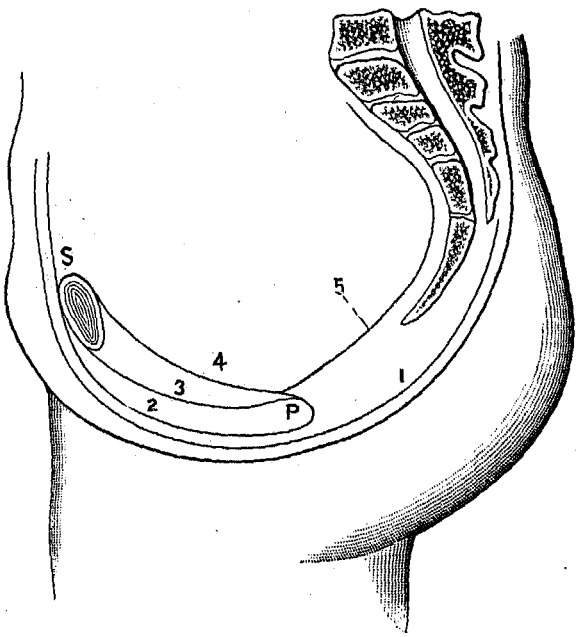


Fig. 1.—Sagittal section of the pelvis. (Browning in Jewett's Practice of Obstetrics.) P. Perineal ledge. 1. Superficial layer of superficial fascia. 2. Deep layer of the superficial fascia. 3. Anterior layer of the triangular ligament. 4. Posterior layer of same. 5. Rectovesical fascia.

great significance and are undoubtedly of chief importance in slinging the bladder the vagina and the lower part of the rectum in the pelvis." It should be noted that the aponeurotic sheaths which invest the rectum and the vagina are extensions of the rectovesical fascia.

The fascial sheets of the opposite sides of the pelvis unite in a median raphe. The posterior layer of the triangular ligament fuses in the middle line with the rectovesical fascia except where perforated by the tubular viscera. Thus we have in the mesial section of the pelvic floor a conjoined tendon not unlike the linea alba of the abdominal wall.

At their posterior border or base both layers of the triangular ligament unite in the bisischial line with the deep layer of the superficial fascia where the latter turns backward over the transversus perinei muscles, forming the perineal ledge or ishioperineal ligament (Fig. 1). The perineal ledge, a strong fibrous band running

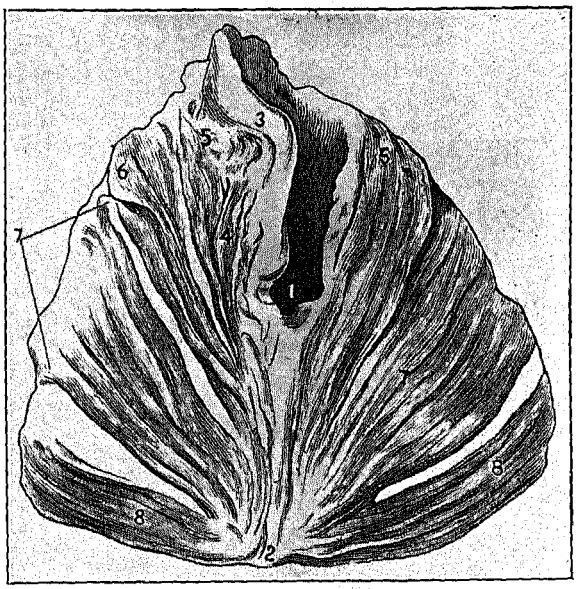


Fig. 2.—Levator ani muscles, showing trend of fibres. Drawing from a cast of a dissection made at the Long Island College Hospital. (Browning in Jewett's Practice of Obstetrics.) 1. Rectum. 2. Coccyx. 5. Pubic band of levator.

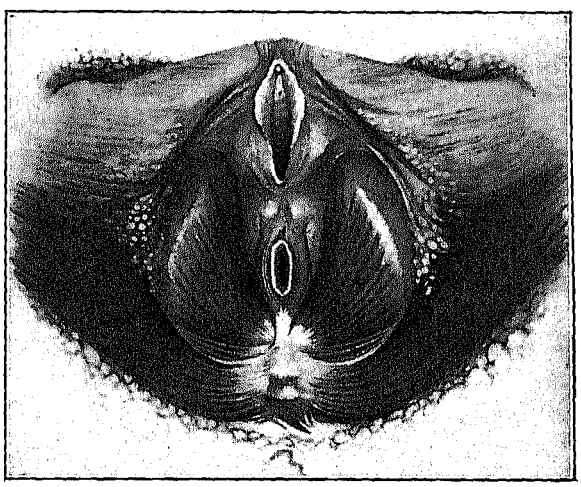


Fig. 3.—Levator ani muscles as seen from below. From a dissection. (Browning in Jewett's Practice of Obstetrics.) 1. Fibers arising from the os pubis. 2. Fibers arising from the white line. 3. Fibers arising from the ischial spine. 4. Sphincter ani externus.

transversely through the base of the perineal body immediately in front of the anal orifice, obviously bears a significant relation to deep perineal lacerations.

Muscles. The levator ani muscles have their own sheaths. The latter are firmly united with

the rectovesical fascia above and, centrally, with the deep layer of the triangular ligament below. Nearly all the fibers of these muscles sweep backward toward the coccyx. While the companion muscles are in close contact behind the rectum in front of the coccyx, with a single minor exception to be mentioned later the levators nowhere pass across the median line; they are not continuous with their fellows of the opposite side (Figs. 2, 3, 4).

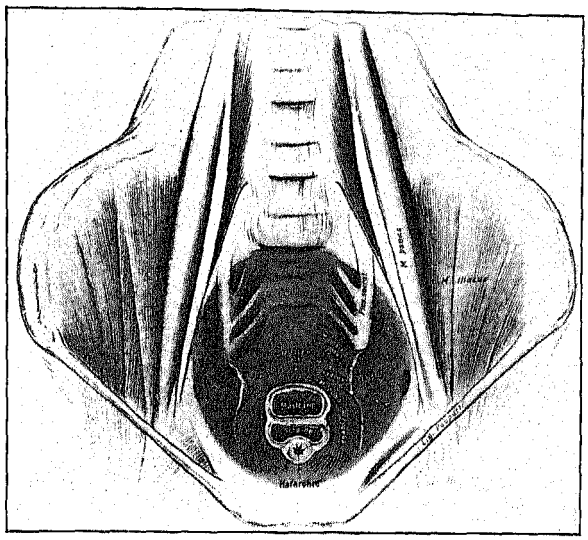


Fig. 4.—Showing levator ani muscles as seen from above. (Sellheim.)

Browning held that absolutely no levator muscle fiber crosses the middle line, that all run to or toward the coccyx. Consistently with this view he pointed to the fact that in the lower animals the function of the levators is to move the caudal end of the spine, to wag the tail. His opinion of the general course of these muscles I have repeatedly confirmed by the study of his and other dissections. His dictum, too, that no muscle fibers traverse the median line is is borne out by my own observations except for a few deep fibers of the external sphincter ani. These will be referred to again.

It will be seen that the only part of the levator which is in direct relation with the rectum and the perineal body is its median border. The pubic portion of the levator, therefore, is practically the only division of the muscle which concerns the present discussion. The other divisions of the muscle do not especially interest us. The real levator ani is the pubic band (Fig. 3).

The origin of the pubic division of the levator is much more extensive than appears in most anatomic descriptions. It extends from the posterior aspect of the pubic bone, at a point about one-half inch from the midsymphysis, along the pubic ramus to the anterior limit of the white line. At its origin the pubic band on either side of the median line is thus about one and one-half inch in width. At its insertion it subdivides into two lamellæ. The posterior or outer lamella, which is much the larger, sweeps backward, by the lateral wall of the vagina and the rectum, and goes toward the coccyx. This is the pubococcygeus. The anterior lamella runs toward the perineal flexure of the rectum. A few of its fibers passing in front of the bowel become continuous through the intervention of tendon with the opposite transversus perinei muscle, a few go to the rectal sheath, others extend into the external sphincter ani of which they form a part. The latter division of the pubic band is the puborectalis. The median borders of the puborectales are separated by a V-shaped interspace. The width of this interspace at the pubic arch is one inch or less. The puborectales, when intact, may distinctly be felt in the living subject by the examining finger. Rendering them tense by backward pressure with the finger of one hand passed within the vaginal orifice, they are readily made out by a finger of the other hand where they sweep by the lateral wall of the vagina, one-half inch or less above the plane of the hymen. They present as two small, firm, more or less rounded, cord-like bands, often thinner than a lead pencil. The course of each may be traced from the posterior surface of the pubic bone backward to the perineal flexure of the rectum. Just behind the puborectalis and running obliquely backward is the pubococcygeus. When these two pairs of muscles contract the finger held in contact with the posterior vaginal wall is lifted forward, toward the pubic arch.

Clinically, the contraction of the pubococcygei and the puborectales, elevating the lower end of the rectum and vagina as it does, gives the impression of a U-shaped sling or loop about the lower ends of these viscera. For the puborectalis this looping is in part muscular. The external sphincter ani is essentially a circular muscle. Its deep fibers decussate to some extent in front and behind. Here we have, so far as I have been able to discover, the only instance in which muscle fibers of the levator overstep the median line. The power of the levators to lift the central portion of the floor depends, in very small degree, on the sphincteric loop behind the rectum. But the muscle fibers of the pubococcygei, as we have seen, do not form a loop behind the rectum. They all pass backward obliquely, alongside the lateral vaginal and rectal walls, all of them going to the

coccyx with or without the intervention of tendon. The apparent looping of the pubococcygei behind the rectum is due to the fact that the companion muscles are linked together by the fascial or fibrous structures, which intervene between them behind the vagina and rectum. As they sweep backward they are intimately attached to the rectal sheath. These fascial or fibrous structures about the rectum it is which connect the pubococcygeus of one side with its companion of the other, and explain their sling-like action upon the central part of the pelvic floor.

The pubococcygei, then, are to the pelvic floor what the recti are to the abdominal wall. This is the salient point in my conception of the pelvic floor in its relation to the lacerations of childbirth. Comparatively few levator fibers traverse the lines in which the principal obstetric lacerations run. For the most part the course of the muscle fibers is nearly parallel to that of the tears, and a little to the outer side of them, nearer the pelvic wall. Except for the perforations by the tubular viscera, their tendinous union in the median section of the floor is comparable to that between the recti abdominis.

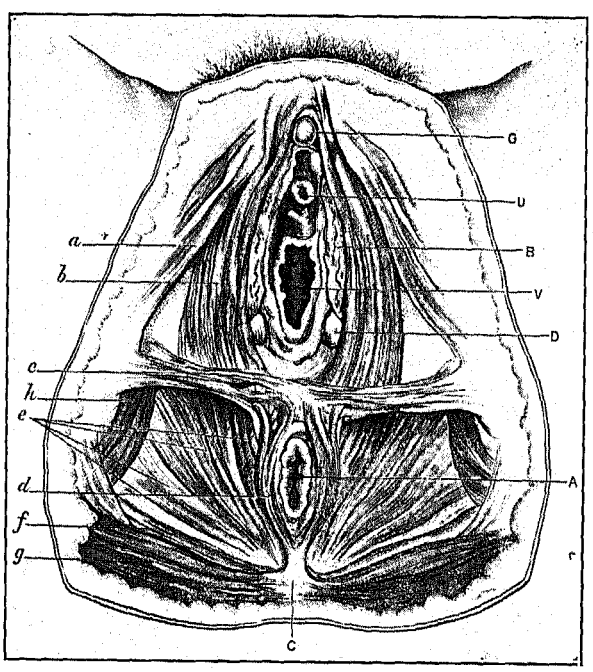


Fig. 5.—Muscles of the pelvic floor. (Modified from Savage.) b. Bulbocavernosus. c. Transversus perinei. d. Sphincter ani externus. e. Levator ani.

The remaining muscles of the floor, the bulbocavernosus, the transversus perinei and the sphincter ani, lie in a plane immediately below the anterior layer of the triangular ligament and therefore below that of the hymen. The paired muscles of the latter group join centrally in the external portion of the perineal body, just in front of the anal orifice. These more superficial muscles, though secondary in importance to the levators, deserve some attention as factors in the strength of the pelvic diaphragm. (Fig. 5.)

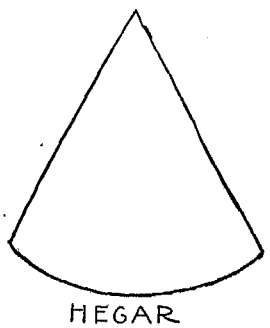
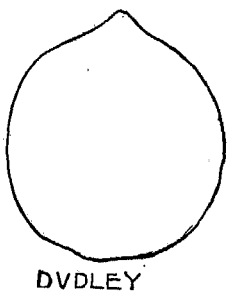


Fig. 6.



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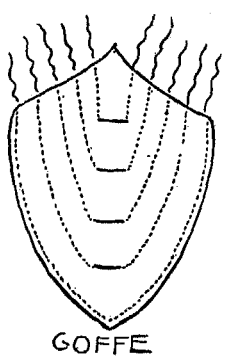

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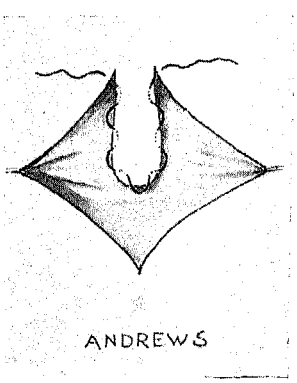


Fig. 10

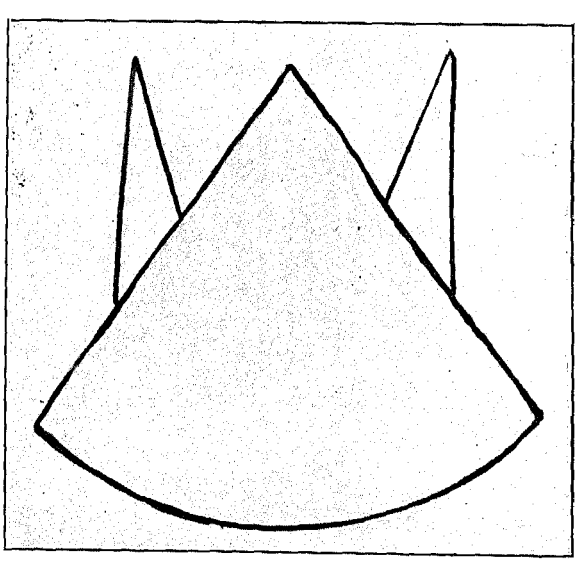


Fig. 7.—Showing failure of the Hegar operation to mend fully the tears in the vaginal sulci.

Notwithstanding the ridicule that has justly been brought upon the so-called perineal body as the keystone of the arch, that structure is, nevertheless, an important part of the floor of the pelvis in the sense that it comprises the points of union of all the superficial group of muscles and it is involved in the principal lacerations of child-birth.*

Nature of Injury.—The obstetric lacerations of the pelvic floor as taught by certain authorities, have no constant shape or direction. One author makes more than twenty different varieties of perineal tears. Another declares that it is impossible to comprehend the nature of the injury in a given case until the operator has first tried

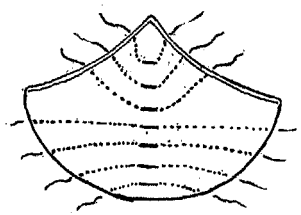


Fig. 11.

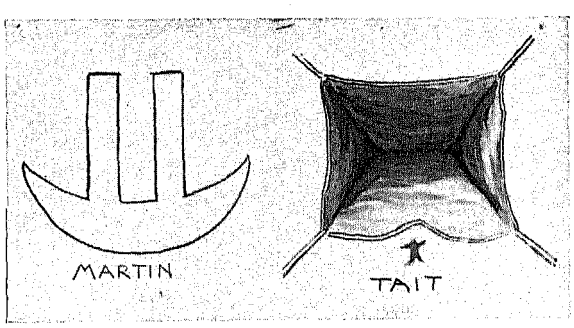
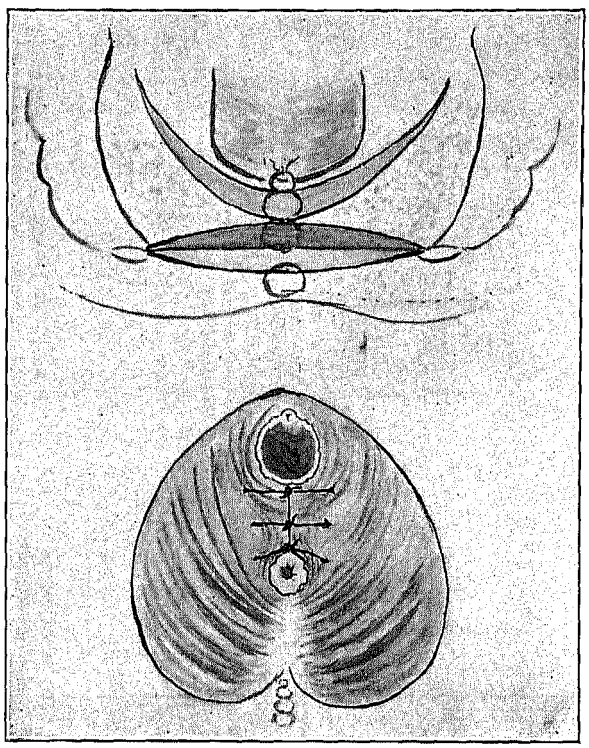


Fig. 12. Fig. 13.

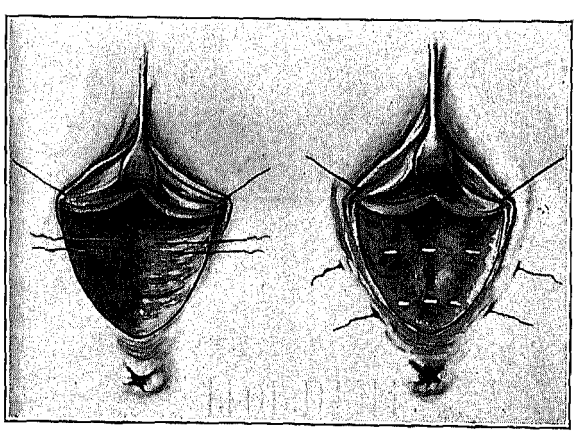
with tenacula in what direction the torn structures can most readily be brought together. Such teachings make mystery of what, in fact, is comparatively simple. All lacerations which materially affect the strength of the floor run up one or both vaginal sulci, alongside the rectum, and usually extend externally more or less completely through the perineal body nearly in the median plane. Deviations from this form are more apparent than real and are due to overstretching of the floor at the close of labor, in some degree to retraction of torn muscles and, later, to shrinking of scar tissue.

The vaginal portion of the tear severs more or less completely the fascial attachments of the



Figs. 14-15.—G. H. Noble.

pubococcygeal muscles to the rectum and ruptures other fibrous structures in the perineal region. It also disrupts in part or wholly the puborectalis muscle of one or both sides. The external tear, that below the level of the hymen, when deep, cleaves the central tendinous union of the bulbocavernosi and of the transversi perinei and also the strong perineal ledge which partly invests the latter muscles. Since the sling-like action of the floor depends obviously, in the main, upon



Figs. 16-17.—Holden.

*Thompson's Myology of the Pelvic Floor, a work which has fallen into my hands since reading this paper, agrees in the main with the foregoing.

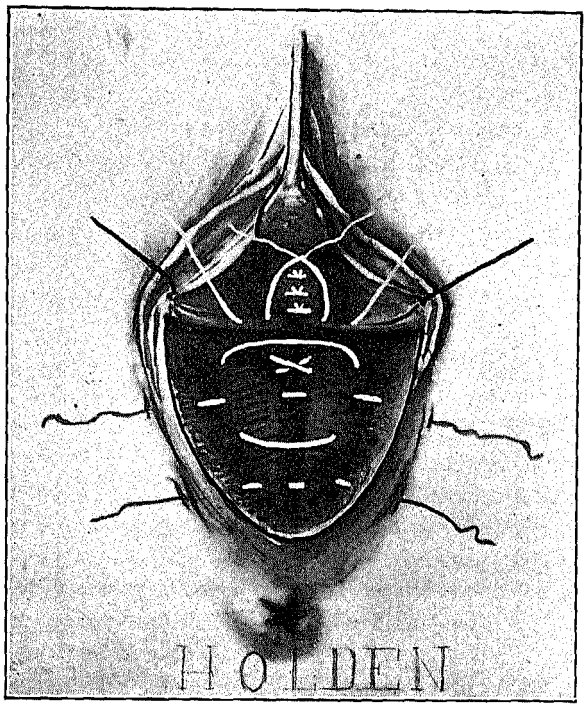


Fig. 18.

the pubic bands of the levators, the most important part of the injury is the tear in the vaginal sulci, so much, that is to say, of the laceration as lies above the hymeneal plane. The external portion of the tear is of secondary importance. Yet it is not so wholly without effect in weakening support as certain authors assume. The

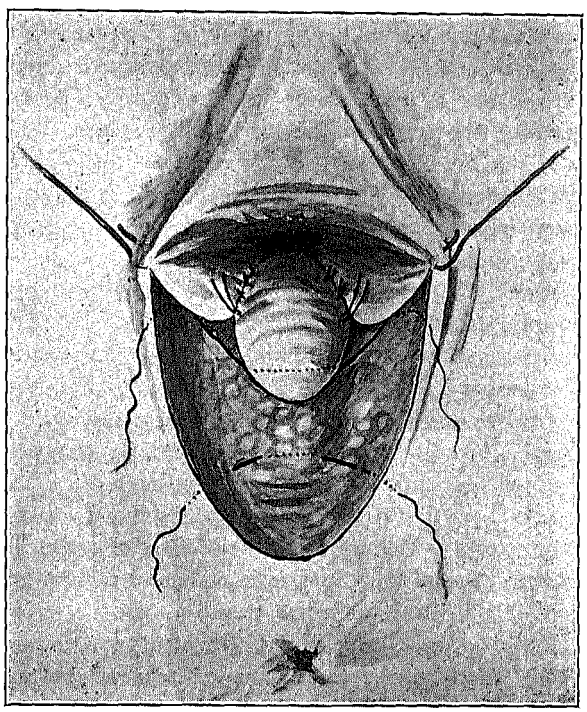


Fig. 19.—Emmet.

posterior transverse border of the urogenital fascia or triangular ligament, and the tendinous union of the superficial muscles, both of which are involved in extensive lacerations, are, in a minor degree, elements of strength which cannot be sacrificed without some loss.

Faults in Prevailing Operations. In the light of the foregoing facts the defects of many operative methods commonly employed in the plastic surgery of the pelvic floor are apparent. Most of the prevailing types of operation other than Emmet's are represented by those of Hegar, Martin, and Tait.

The Hegar operation makes a triangular denudation with the apex of the triangle uppermost and in the median line. The lateral halves of the triangle are then brought together by sutures (Fig. 6). Operations of the Hegar type coapt tissues from either side of the median line with no definite reference to the normal anatomic relations. They bring together structures that were not intended to come together, and they do not result even in a permanent artificial substitute for the natural mechanism of the pelvic floor. A part of the injury in the lateral sulci, too, is left untouched (Fig. 7).

The methods of Goldspohn, A. P. Dudley, Goffe, Andrews, Pryor and certain others do not differ essentially in effect from that of Hegar (Figs. 8, 9, 10, 11).

Martin's operation, in addition to the usual crescent below, makes two rectangular denudations running up the posterior vaginal wall (Fig. 12). This, while it may serve to narrow the relaxed vagina, does not mend the lacerations in the sulci, since the vaginal denudations are not made at the seat of the injury.

Perhaps the most unscientific of all the procedures commonly practiced is that of Tait (Fig. 13). It makes no attempt to restore the structures *ad integrum*. It masses together indiscriminately tissues between rectum and vagina. Its seductive feature is the facility with which it may be performed.

Certain recent proposals are deserving of more attention. The contention of Dr. M. L. Harris,[2] of Chicago, is of very great interest. He believes the injury is essentially muscular, and appears to fix the responsibility for the relaxation of the vaginal orifice almost entirely upon the laceration of the puborectalis muscles.

The vaginal portion of the laceration, according to Harris, most frequently severs the puborectalis at a point corresponding to the tear in the sulcus. Yet he declares the muscle may sometimes be torn in any other part of its length. His

operation lays bare the puborectalis where it sweeps by the lateral wall of the vagina, resects the cicatricial portion of it and sutures the muscle ends together. Its sole purpose is the restoration of this slender muscular band from 3 to 6 mm only in width. It would seem that he had overestimated the importance of this comparatively insignificant muscle and had overlooked the greater importance of the remaining portion of the pubic band of the levator.

The elevation of the lower end of the rectum and the structures in front of it surely depends more upon the larger muscle, the pubococcygeus, than upon the slender band of fibers which make up the puborectalis. The pubococcygeus is firmly attached to the sheath of the rectum where it sweeps by it and to other fibrous structures of the perineal body. The sling-like action of the levator muscles is due more to the fascial attachments of the larger muscle than to the thin musculo-fibrous sling formed by the lesser one. Not only should the torn puborectalis be restored, but, more important still, the fascial attachments of the pubococcygeus to the rectum and the perineal body must be re-established.

It is to the latter injury that the chief significance must be attached and to this that the reparative attempt must, in the main, be addressed. Operation at the sulci, in the vast majority of cases, at least, if properly carried out, effectually restores the sling-like action of the puborectalis at the same time that the perineal attachment of the pubococcygei is restored. After successful perineorraphies the puborectales as well as the pubococcygei may distinctly be felt in their normal relations and tonicity.

An ingenious piece of surgery has been devised by Dr. G. H. Noble, of Atlanta.[5] He makes an irregular quadrangular denudation carried high enough in the vagina to give access to the borders of the levator ani muscles. The anterior border of the levator on each side is then drawn out with tenaculum forceps and its sheath laid open by blunt dissection, in the direction of the muscle fibers. The upper layer of the sheath is separated from the muscle for a short distance and this freed edge of the sheath, together with the edges of the vaginal wall, sutured to the corresponding structures of the opposite side in the median line from the upper limit of the denudation down to the crown of the perineum. Next, a few sutures bring together the muscles. Another tier of sutures closes the lower laminæ of the muscular sheath, together with the triangular ligament, the deep layer of the superficial fascia and the muscular structures between the latter two fascial sheets. A fourth tier of sutures closes the skin (Figs. 14-15). This operation, it will be seen, is analogous to a familiar method of dealing with ventral hernia between the recti abdominis. It consists essentially in suturing together, layer by layer, the pubococcygei muscles and their sheaths in the median line. While it does not restore the primary relations this doubtless affords a barrier to prolapse. It may effect a good substitute for the natural mechanism but the technic is somewhat complicated.

Dr. C. P. Noble, of Philadelphia,[4] exposes the anterior borders of the levators and aims to bring them together in the median line. An improvement on the technic of Noble is described in the current issue of the *American Journal of Obstetrics,* by Holden, of the Johns Hopkins Hospital.[3] The median borders of the pubococcygei are drawn downward and inward and are definitely approximated (Figs 16-17-18). This, perhaps, is the most satisfactory of the procedures which substitute an artificial for the natural relations of the supporting muscles.

The Rational Method of Repair. Any rational anatomic operation for restoring the pelvic floor in incomplete lacerations must conform to the Emmet type. The most essential part of the suture is that in the vaginal sulci, above or within the plane of the hymen. (Fig. 19.)

Immediate Operation. In the immediate operation the first sutures should be passed from the vaginal surface. They are entered in a direction nearly perpendicular to the vaginal mucosa and are given a wide sweep on the pelvic side to engage the edges of the torn fascial sheets. On the median side they should pick up the sheath of the rectum. The plane of each suture may be somewhat oblique to the vaginal axis, the loop being nearer to the skin surface than the knot, in order to lift the sagging structures which have been pushed downward by the advance of the presenting fœtal pole. The trough-shaped wound in one or both sulci is thus closed down to the hymeneal orifice. The external part of the laceration is brought together by two or three sutures, passed perpendicularly to the skin surface. The vaginal portion of the work is facilitated by seizing with a volsellum the central point of the posterior vaginal wall, at its hymeneal border and holding it in its normal position, about three-fourths of an inch behind the meatus urethræ. This develops the gutter-shaped tear in one or both sulci and helps to make plain the nature and

extent of the injury. Lateral vaginal retractors also facilitate the application of sutures.

Secondary Operation. Incomplete Lacerations. It would seem reasonable to require that in secondary operations the denudation be done in such manner as to reproduce the original wound, then the sutures may be applied substantially as in the immediate operation, with such modification only as may be needed to overcome whatever distortion may have occurred secondarily. Without going into details, the operation for incomplete laceration should be conducted, in the main, on the lines laid down by Emmet (Fig. 19). Special effort should be made to restore the normal tension of the puborectalis and the attachments of the pubococcygei. Drawing them down with a tenaculum, as the main sutures are passed, may help. Pains should be taken to coapt with the crown suture the posterior canuncles without the intervention of the point of the undenuded vaginal tongue. The latter should fall above the hymeneal ring.

Complete Laceration. In complete lacerations, either the operation of Kelly or that of Geo. H. Noble has, in my hands, yielded the most satisfactory results. In either technic the sphincter ends are freed and brought together by buried sutures. Turning down the apron of vaginal mucosa as advocated by Kelly, or freeing and drawing down the anterior wall of the rectum, as practiced by G. H. Noble, effectually shuts off all communication between the wound and the lumen of the bowel. With the wound thus safeguarded against infection union of the sphincter is almost absolutely assured.

Conclusions.

The pelvic floor is essentially a muscular diaphragm.

The muscles of the floor are disposed in two distinct layers.

These layers are separated by the plane of the hymen.

The upper layer is the levator ani.

The general trend of the levator fibers is toward the coccyx.

The rectum and the perineal body are in relation with the median borders of the levator muscles.

The tubular viscera are slung in the pelvis mainly by the levator attachments to the rectum and to the bridge of fibrous elements in the perineal body.

The most essential part of the obstetric injury is the rupture of these fascial attachments behind the vaginal sulcus and alongside the rectum.

The reparative operation should be addressed, in the main, to the restoration of these fascial attachments.

Restoration *ad integrum* is best effected by the technic of Emmet.

Holden's is the simplest and most definite of the procedures yet devised which attempts support by substituting an artificial for the natural relations of the pubic bands of the levator muscles.

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3. Holden, G. R.—Perineorrhaphy by Uniting the Borders of the Levator Ani Muscles. Am Jnl. Obstet., Oct., 1905.
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A PLEA FOR THE EARLY OPERATIVE DIAGNOSIS OF CARCINONA OF THE STOMACH.

BY GEORGE RYERSON FOWLER, M.D.

Upon the occasion of a recent visit by a surgeon whose operations on the stomach number upwards of five hundred, and whose field of work centers in a small town in one of our northwestern States, to one of the largest and best appointed hospitals in the East, surprise was expressed by the surgeon of the latter that so large a number of cases of carcinoma of the stomach should come under the care of the former, while so few, comparatively speaking, were admitted to the service of the latter. For reply the Western surgeon asked to be taken through the medical wards of the hospital. Here the question was answered in part. An inspection showed that there were twelve cases of cancer of the stomach in the institution undergoing alleged medical treatment.

The question naturally arises in this connection, What does the internist expect to gain by the medical treatment of cancer of the stomach? Has not the day gone by when the treatment of cancer in any locality in the body is to be considered amenable to medical aid, this term being used in contradistinction to treatment by surgical means? And if the answer to this be in the affirmative, upon what reasonable basis can the internist retain in his care cases of cancer of the

stomach beyond the time necessary to make a diagnosis? The same disease, when occurring elsewhere, and accessible to operative interference, is turned over to the surgeon, and in direct proportion to the promptness of radical removal of the diseased part is the certainty of the cure of the patient. There is no gainsaying this statement. While it is true that our knowledge of cancer is scanty, particularly with relation to its etiological factors, it is nevertheless equally true that clinical experience has driven home this conviction to the mind of the surgeon, namely, that there is a period of time in the history of every cancerous growth that occurs within reach of the surgeon's knife, when it can be radically extirpated and the patient insured against a recurrence of the disease. This being acknowledged, there is no escape from the conclusion that early and free extirpation of the disease as it attacks the stomach is the only rational course to pursue, and that to temporize with medical treatment is as irrational and unscientific as it is to prescribe arsenic, Cundurango, and Venice turpentine, as was the custom upwards of three decades ago, for cancer of the breast and cancer of the uterus.

It may be urged that in cancer of the stomach the case is different, as compared with the disease as it occurs in the localities just mentioned; that the invasion of the walls of a hollow viscus such as the stomach, with its rich lymphatics and intraperitoneal environment, to say nothing of its great functional activity and vital importance, is a much more serious matter than cancer of a part that can be readily reached and easily spared in the economy of the individual, as in the case of the mammary gland. In answer to this it may be said: first, that the invasion of the stomach in regions not accessible and of supreme importance to that organ is comparatively rare, as will be shown further on; second, that the anatomy of the stomach, particularly the relation of the lymph channels to the lymphatic glands, and the points at which the latter are situated and their relations, in turn, to the regions of the stomach in which cancer most frequently occurs, are such as to permit of complete extirpation of the involved structures in the early stages of the disease; third, that the greater the functional activity of an organ the more rapidly a malignant neoplasm advances in its tissues; fourth, and finally the greater the vital importance of the organ the more imperative the demand for early diagnosis and radical curative treatment.

The most important point in the anatomy of the stomach in its relations to the possibility of complete extirpation of cancerous disease relates to its lymphatic system and the situation of the lymphatic glands. According to B. Cuneo* the lymphatics of the mucous membrane of the stomach finally end in a submucous network. From this network collecting trunks arise which perforate the muscular coat and terminate in other collecting trunks situated between the serosa and the muscularis (the sero-muscular collecting trunks), which, in their turn, spring from a subperitoneal network that receives all the lymphatics from the muscularis and serosa. The exceedingly intimate relation which exists between the lymphatics of the mucous membrane and those of the muscular and serous layers of the organ, and the ease with which practically the entire thickness of the stomach wall becomes infected early in carcinoma of the stomach and in cases of gastric ulcer, as well, are therefore apparent at a glance.

The final distribution of the musculo-serous collecting trunks is of interest in connection with our present study. First in importance come those known as the superior or converging trunks (Sappy). These are from 6 to 8 in number. They accompany the gastric artery and converge to join the group of glands situated at the point where the coronary artery approaches the lesser curvature. This group of glands, therefore, receives the lymph current from the body of the stomach, and from the lesser curvature side of both its pyloric and cardiac extremities. There is, however, one exception to be noted in this general scheme of lymphatic drainage from this portion of the stomach, namely, the existence of one or two very fine vessels which pass from the upper part of the pylorus and empty into the lymphatic trunks that lead from the retropyloric glands. With this single exception the coronary chain of the celiac glands receives practically all the drainage of the lymph current from the pyloric end of the stomach through their afferent vessels. In turn efferent glands of this group terminate in the pre-aortic glands which surround the celiac axis. The importance of these coronary gastric glands from the surgical view-point will be referred to later on.

The collecting trunks of the greater curvature pass, generally speaking, in the direction of the gastro-epiploic gastric vessels, that is to say, from left to right, and drain into the glands placed between the layers of the great omentum and around the right gastro-epiploic vein (the

* The Lymphatics, by G. Delamere, P. Poirier, and B. Cuneo. Translated and edited by Cecil H. Leaf.

sub-pyloric glands). It is to be noted in this connection that the lymphatic current in the collecting trunks of this group drains *away* from the fundus, and *toward* the pylorus. This, together with the further fact that the presence of glands in the fundus of the stomach is very exceptional, and that they are rarely found upon the greater curvature, save a few aberrant glands situated between the layers of the great omentum along the descending branches of the gastro-epiploic arch, is of significance in its surgical aspect.

The collecting trunks of the fundus become the afferent vessels of the splenic chain, passing between the folds of the gastro-splenic omentum in their course toward the hilum of the spleen.

Finally, it should be stated that there is sometimes present small glandular nodules in the course of these different collecting trunks (the parietal gastric glands of Letulle). These may be situated in the walls of the organ, either in the subserous layer or in the superficial portion of the muscular coat, and at variable distances from the curvatures. The presence of these nodules is by no means constant, and when present in cases of gastric cancer their situation in the course of the afferent lymph channels brings them practically within the area of possible extirpation of the disease.

The bearing of the facts detailed cannot be overestimated nor too often emphasized, particularly when considered in connection with the infrequency with which carcinoma attacks portions of the stomach comparatively free from lymphatic glands, and, *per contra,* the frequency with which parts both easily accessible and the seat of lymphatic glands are attacked. At least two-thirds of the greater curvature, and the entire fundus of the stomach is practically free from lymph glands, the latter being for the most part situated on the lesser curvature, about the pylorus, and on the pyloric third of the greater curvature. The lessons to be learned from these special anatomical features of the stomach are obvious. The extent and situation of the lymphatic infection is the most important consideration in operations for the radical cure of gastric cancer, in the vast majority of cases. While it does not necessarily follow that the presence of enlarged lymphatic glands in the neighborhood of a suspicious lesion of the stomach wall is pathognomonic of cancer, yet it is true that, once ulcer of the stomach can be eliminated, the suspicion of carcinoma is correspondingly strengthened. Practically these two conditions, namely, ulcer and carcinoma, are the only lesions of the stomach that give rise to enlarged lymyhatic glands in the neighborhood of that viscus, or, as rarely happens, in its walls. Simple glandular hyperplasia is a rather frequent accompaniment of gastric ulcer, a fact that must be taken into account in performing exploratory laparotomy in gastric lesions. On the other hand, gastric carcinoma, as it comes to the surgeon, presents the almost invariable feature of enlarged lymphatic glands. In the Breslau clinic the proportion was not less than ninety-five per cent. This glandular enlargement in cases in which the disease has reached the stage of ulceration, may be due to septic processes present. It is safest, however, to regard all such enlarged glands as the seat of carcinomatous infection, particularly those situated about the celiac axis.

An important fact, before alluded to, but one frequently overlooked, although bearing directly on the question of the probability of extensive involvement of the lymphatics of the stomach in any given case and hence likely to influence the decision as to operative interference, is the frequency with which different regions of the stomach are first attacked by cancer. Brinton, quoted by Einhorn,* found that out of 360 cases of cancer of the stomach the pylorus was the part first affected in sixty per cent., the cardiac extremity was first attacked in ten per cent., and that involvement of the different portions of the greater and lesser curvatures represented the remaining thirty per cent. Further, of 1300 cases collected by Welch (quoted by Einhorn), in less than one and a half per cent. the disease attacked the fundus. In other words, according to these figures, the disease is primarily located in the great majority of cases where it would be not at all difficult of removal in the commencement, even if we accept the most unfavorable of these figures as a basis for our argument. As a final thought in this connection the fact should not be overlooked that between thirty and forty per cent. of all cases of cancer involve the stomach.

There can be no doubt that physicians hesitate to recommend surgical intervention to their patients suffering from gastric carcinoma because of the immediate danger to life arising from the operation, as well as because of the uncertainty of permanent cure. And it is unquestionably true that the results will be better in both regards if patients are operated on in an earlier stage of the disease. But here comes the dead-lock. The physician is not willing to turn the patient over to the surgeon until the diagnosis is assured, and

*20th Century Practice of Medicine, Vol. VIII, p. 248.

when it can be positively stated as the result of laboratory aids and an external physical examination that cancer of the stomach is present, the results of operation are so disheartening that the physician is loth to urge it. And it only too frequently happens that a physical examination is not made, much less laboratory aids brought to the case, until a long period of suffering from so-called indigestion is succeeded by decided loss of weight and marked cachexia, a condition in which the merest tyro in medical science, or even the patient himself or his friends, can make the diagnosis.

In the absence of enthusiasm on the part of the medical attendant in favor of surgical treatment it is little wonder that the patient first tries the X-rays or some other and equally futile expedient, with the result that, if he ever comes to the operating table a condition of affairs is revealed that is only too often impossible of remedy. The surgeon may have presented to him either one of the following conditions: (1) Extension of the disease to surrounding structures that makes a radical operation out of the question; at the same time the wall of the stomach may be infiltrated to an extent to forbid even the palliative operation of gastroenterostomy. (2) The glandular and other involvment may forbid resection, and yet the existence of pyloric obstruction demands gastroenterostomy. (3) The disease may have advanced mainly in the stomach wall, with apparently very slight glandular involvement, and scarcely no adhesions. This condition of affairs offers a temptation to the surgeon to attempt a complete or a partial gastrectomy. If the former is the operation chosen the patient will be very likely to die for want of sufficient rallying power. In other words, the operation kills him, not through any fault of the operation, but because the long existence of the disease and the weakness thereby induced has taken away from him his chance of being benefited by an attempt at radical cure. If partial gastrectomy is decided on, and the surgeon is successful in carrying out the steps of the technic with facility and despatch and the patient rallies, a rapid convalescence and brilliant immediate recovery ensue, only to be followed in a few months, or at the most in a year or two, by a return of the disease, either as a local growth, as a regionary glandular recurrence, or as a metastasis.

This is the case as it is presented to the surgeon in these days, when the absolute hopelessness of cases of cancer, when treated by other than surgical means is recognized the world over. The cases must be very rare which fall into the surgeon's hands while the growth is still sufficiently localized to hold out a reasonable hope of cure by partial gastrectomy, the least that can be done for the radical cure of gastric carcinoma. In an exceptionally extensive experience in abdominal work I have never yet seen a case of which I could conscientiously say, after closing the abdomen, that either an immediate or a remote recovery was probable. And yet we are able frequently to advance just such favorable prognostics in cases of cancer outside the abdominal cavity.

And thus it comes about that between the tardiness with which the patient consults a physician, the possibilities of delay on the part of the medical attendant in suspecting cancer and instituting proper measures to either verify or annul this suspicion, the unwillingness of the physician to take the responsibility of advising the operation in the face of the high mortality in this class of cases when operated on, and, finally the desire on the part of patients to try other means first before submitting to operation, the surgeon's efforts stand but a poor chance of success in cases of cancer of the stomach. Add to these considerations the fact that the disease may be far advanced and yet not excite any suspicion of its presence even when the patient is himself a surgeon and well skilled in the surgery of the stomach, as happened in the case of the late lamented Professor Mikulicz, and the further circumstance that the classical combination of symptoms, namely, pyloric obstruction, coffee-ground vomit, and the presence of a tumor are of no avail for purposes of early and radical operation, since they are late manifestations of the disease, and the outlook for surgical relief of cancer of the stomach appears very gloomy. Laboratory aids to diagnosis are not always available, and even if applied early in the case, do not always give positive information. The absence of hydrochloric acid may be, and generally is postponed until extensive involvement of the peptic glands has taken place. The demonstrated presence of lactic acid is also a late, as well as an untrustworthy symptom in many cases. In my experience no physician has been willing to advise his patient to undergo a surgical operation upon the basis of the affirmative evidence afforded by the Eppler-Boas bacillus alone.

Now for the other side of the case: In the majority of cases of cancer of the stomach there are sufficiently distinctive symptoms of gastric disturbance early in the case to excite suspicion in

the mind of a physician who is on the lookout for malignant disease, but which, in the mind of a less alert practitioner will pass for indigestion and be treated by bitter tonics, hydrochloric acid, and that least efficient of all remedies, pepsin. Symptoms indubitably gastric in origin, occurring in a patient in middle or advanced life, and which do not yield to rational therapeutic and dietetic measures of treatment in from a fortnight to a month serve as a reasonable foundation for a suspicion of cancer. The medical man who takes the alarm at this stage of the disease, bearing in mind that from thirty to forty per cent. of cases of cancer occur in the stomach and realizing that cure of the disease is possible here as elsewhere, if operative treatment is instituted while the growth is localized, will save many lives. To do this, however, he must have the courage of his convictions, and infuse some of his own optimism into the minds of his patients. On the other hand, he who insists upon the absence of hydrochloric acid, the presence of lactic acid and the Eppler-Boas bacillus, and who, perhaps, delays the diagnosis for the old classical symptoms of pyloric obstruction, coffee-ground vomiting, and a palpable tumor to make their appearance, will bring his patient to the surgeon, if he brings him at all, in a condition beyond operative aid.

And now as to the course to be pursued in order to give patients the benefits of early operation. Plainly, the course lies in the direction of early diagnosis. In the light of what has been said concerning the late appearance of those symptoms on which the profession has heretofore relied, it must be at once conceded that these are not available for our present purpose. Until some more trustworthy means of early diagnosis at the hands of the internist are discovered, the diagnosis must be made by the surgeon. And this must be operative. The keynote of the situation is to submit a patient whose age and persistent gastric symptoms should awaken a suspicion of cancer of the stomach to an exploratory incision. The advice given to the patient to submit to this comparatively safe, and in every way rational operation should not be half-hearted, but decided and in a hopeful tone.

The technic of the exploratory procedure need not detain us in this connection. It may be stated in general terms, however, that the operative effort to reach a diagnosis need not necessarily involve grave risks. The exposure of the stomach through a short epigastric incision in the great majority of instances will not involve a greater risk at the hands of an aseptic surgeon, than those involved in the administration of an anesthetic, in a patient who has not advanced beyond the stage of suspicion. Even if gastrotomy for the purpose of investigating accurately the interior of the stomach is added to the exploratory laparotomy, grave dangers are not courted. With modern methods of suture of the stomach wall, rapid and trustworthy union is assured, and feeding with small quantities of milk frequently repeated may be commenced and carried forward practically as soon as the patient is past the period of post-anesthetic gastric disturbances. It goes without saying, however, that the surgeon should have the permission of the patient to carry the operation far enough to accurately determine the conditions present, and, in the presence of demonstrable cancerous disease to endeavor, as in the case of cancer elsewhere, to thoroughly eradicate the disease.

POSTOPERATIVE PARALYSIS.*

BY RUSSELL S. FOWLER, M.D.
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The occurrence of postoperative paralysis may be disclosed while the patient is recovering consciousness from the anesthetic when the attendant may discover that the patient fails to move the part affected. More commonly, however, the discovery is made at a later time when the patient complains of inability to move the affected part. In case the paralysis affects a part of the body covered by a dressing the discovery may only be made when such a dressing is changed. The reasons for these paralyses are numerous.

Paralysis due to operative traumatism. The cause may be in the operative procedure itself, particularly if the operation has been in the neighborhood of or has involved one or more large nerve trunks. The suspicion would naturally arise, in such a case, that the nerve or nerves had been cut, ligated, contused through improper retraction, perhaps pressed upon by a drainage strip, or even injured by the antiseptic employed. The prognosis will depend greatly upon the rapidity with which symptoms of improvement appear. Should symptoms of return of function appear after a few days or weeks, a rapid recovery may be looked for; if after several months, recovery will be slow; if a longer period elapses without definite symptoms of return of function, recovery

* Read before the Brooklyn Medical Society, Nov. 17, 1905.

may be despaired of. In this particular class of cases it is almost always a single nerve that is affected; for example, the recurrent laryngeal in goiter operations.

It is rarely that the exigencies of an operation will demand destruction of an important nerve structure. If such is necessitated by the operation, such nerve structure should be united whenever such a course is practicable. The inclusion of a nerve in a ligature is inexcusable. Sufficient retraction must be employed to clearly expose the operative field, but never to the extent of injuring the underlying tissue.

Paralysis of an Entire Extremity. It sometimes happens that an entire extremity is affected; for example, after resection of the elbow there may be found total paralysis of the forearm extending up to but not beyond the level of the operation.

Hysterical paralysis: It hardly seems probable that the musculo-spiral, median, and ulnar could all have received operative injury. It may be that such cases are hysterical. If so, there should be other signs of hysteria present. In addition, hysterical paralysis may occur in a part of the body other than that operated upon. True hysterical paralysis occurs in patients having an hereditary predisposition to mental disturbances. Some have post-operative amnesia, others delirium or mental confusion. They may resemble hystero-traumatic palsies. That such cases are hysterical in origin is further shown by the fact that such disturbances do not occur in children (Prof. Joffroy of Paris, Congress of French Alienists and Neurologists, August, 1898), and also that they are not observed among soldiers. (Dr. Granjux of Paris, same reference.) This latter is probably due to the care exercised in the selection of soldiers.

Constriction Paralysis. The tourniquet is responsible for some paralyses, though fortunately this cause is rare and can always be avoided. The most common example is paralysis of the musculo-spiral nerve. As a result of carelessness or ignorance, the tourniquet, instead of at a higher level, may be placed around the arm at the point where this nerve curves around the humerus. Constriction paralyses are more apt to occur in lean individuals.

Postural Paralysis. This is caused by improper position of the patient on the table. The nerves affected may be at a distance from the field of operation. For example, a laparotomy case may develop paralysis involving part or all of the brachial plexus or a paralysis of the ulnar or musculo-spiral nerve. In paralysis involving the brachial plexus the cause resides in a faulty position of the arms above the head. The arms are stretched forcibly above the head, instead of being allowed to assume a natural position. Not only are the nerves put on the stretch, but the position of the arm causes the head of the humerus to press on the plexus, which may be further pressed upon by the clavicle either against the spine or against the first rib.

When the ulnar nerve is affected it will be the result of a faulty fixation of the arm across the chest. If the arms are too tightly fastened respiration is interfered with; if insecurely fastened the arms will fall down beside the chest and are apt to rest against the edge of the table in the neighborhood of the ulnar nerve. In the case of the musculo-spiral nerve the pressure of an assistant leaning against the patient, the arm being fastened across the chest, has been known to cause paralysis.

Other examples of paralysis of the upper extremity are seen in improper Sims' position by not guarding the underlying arm against pressure; pressure on the shoulder by not having the shoulder crutch used in the Trendelenburg position well padded.

In the case of the lower extremity, paralysis may result from pressure or stretching in an improper Trendelenburg position, the patient's legs being flexed at the knees and supporting the entire weight of the body. Stretching of the sciatic nerve may result from a too exaggerated lithotomy position or the lithotomy posts may press too forcibly against the limbs, or an assistant may rest against the leg of a patient in the lithotomy position.

Sensation is disturbed but slightly, and quickly returns.

Paralysis, the result of nerve stretching or nerve pressure from improper position of the patient need only be borne in mind to be avoided. Parts of the body where paralysis is readily produced should be protected from pressure. Exaggerated positions or positions demanding extraordinary strain placed on part of the body should be avoided. The assistant should never rest against the patient. Even slight continued pressure on a patient's chest will produce difficulty of respiration.

It is fortunately true that, while serious paralyses do occur, they are rare. More often there is present a weakness or paresis of the affected part. This is transitory and easily overlooked. The patient mistakes the feeling of weakness for

a natural outcome of the operation, and at first does not call attention to it. This will be particularly the case if the affected part is covered with a dressing.

These paralyses or pareses may be caused by pressure from dressings upon a nerve. As a rule, it is because the splint has been improperly applied, though it may follow secondary swelling under the dressing. For example, the external popliteal nerve at the point where it goes around the fibula may be pressed upon in dressings for fracture of the leg.

The vital necessity of using every care and precaution in guarding against such accidents is apparent, but even more necessary is their early recognition when they do occur. The longer the conditions causing them are allowed to persist the more lasting will be the paralysis. If for no other reason dressings should be inspected and the condition of the parts noted at sufficiently frequent intervals to guard against such calamities. This is particularly true in cases in which such disturbances are likely to occur. The earlier the condition is noticed, the more rapidly, safely and easily can a normal condition be brought about by an immediate removal of the cause and the administration of galvanism, faradism and massage to the affected member.

Ischemic Muscular Paralysis and Contracture. When paralysis occurs as a result of direct pressure upon a nerve truck the condition is bad enough, but an even more hopeless condition may follow if the blood supply of the part is seriously interfered with. Such a condition may follow the ligation of the main artery of a limb, but is more commonly due to an improperly or too tightly applied dressing, particularly unelastic dressings. It may well be that the dressing does not cause an artificial anemia at first, but only after some swelling has occurred. For this reason cases in which plaster dressings and other non-elastic dressings have been used should be inspected shortly after the application of such dressing in order to insure that good circulation is present in the part. The local anemia means insufficient nutrition of the muscles, and the result is a rapidly progressive atrophy which, in turn, results in paralysis. Electric irritability diminishes, faradic reaction is lost first, later galvanic. Contractures appear early, almost simultaneously with the paralysis. The prognosis is very unfavorable. This is perhaps because, as a rule, the condition is not noted until a change of dressing is necessary, by which time the atrophy may be well established. Only in the milder cases is recovery possible. Usually not only is restoration to the normal impossible, but not the slightest improvement can be noticed. The contractures increase steadily. Treatment, electricity, massage and douches, should be continued for months in any event.

These ischemic paralyses are noted more frequently in the treatment of fractures, particularly simple fractures. In compound fracture the voluminous aseptic dressing necessitated by the wound allows of more swelling to occur inside the plaster cast without pressure effects. Moreover the case is seen oftener, as the wound requires change of dressing. Since these paralyses may occur so readily, great care should be taken in the application of the dressing, which should be inspected frequently during the first few days. The patient and his attendants should be instructed to be on the watch for swelling. This will be indicated by change in the distal portion of the extremity, which should be left uncovered for this very purpose.

THE MEDICAL SIDE OF SURGERY.*

BY WILLIAM S. HUBBARD, M.D.

The title of the few remarks which our by-laws allow me to make at this time, was chosen for want of a better to express that more comprehensive view of the surgical treatment of disease which may be said to accord with the license to practice medicine.

Surgery then, legally speaking is a department of medicine and cannot in any sense be said to exist these days as a separate science or art.

Time was when the few arts of surgical character were performed by men untrained in "physic" for example, cupping and bleeding as practiced by barbers, and for a time the more heroic and extensive operations were done by men not licensed or recognised as qualified to take the whole charge of the health of the patient. Later, however, and I believe first in England, it was required by law that the man who would do surgery must, notwithstanding the limited field of work which he proposed to enter, take his degree in medicine. Whether he would or not, he must become a Doctor of Medicine and not only a Master or *Mr.* of Surgery. Such is the law in this country. In the first instance all are graduates in medicine and qualified in most of our states by special license to practice medicine in all its branches.

* Read before the Brooklyn Surgical Society, Nov. 2, 1905.

It is very far from my purpose or desire to call in question the skill or ability required to perform well any special work, but it is rather my wish to discuss the bearing of the general training of the physician on the treatment of very many surgical diseases and to show, if possible, that the treatment of those diseases, the welfare of the patients and the question of the good health of the community still demand and rightly so the exercise of the best powers of the physician as well as and as much as the more specially trained skill and sense of the surgeon even in the care of any of the more distinctly surgical diseases.

The cause of the disease, its pathology, and its symptomatology are to be viewed from the most comprehensive view-point as well as from the most limited and the prognosis and treatment must be based upon those broad and sound principles which the science has established and which are never in conflict with the dictates of a judgment rightly trained to the work of a limited sphere.

In an age when there is so great a tendency to do something in any sets of conditions, when efficiency is measured by action, when strenuous effort is so much the mark of accomplishment; it seems well occasionally to inquire into the value of knowledge, of deliberation, of patience and of withholding the hand. Whether it is not, sometimes, better to know before we do, to think well and thoroughly before we act, to wait before we venture.

This desire to be doing invades the realm of our professional sphere.

The tendency to do surgery seems at times to overshadow the value of knowing medicine, and yet I conceive that at all times the best interest of our patients is conserved by the widest possible consideration of the conditions surrounding any given case, though it be of undoubted surgical character. This applies not only to cases of minor surgery but to the more serious major operations as well, and that surgeon is to be considered greatest who surveys the situation with the broadest range, whose accuracy in diagnosis is as clear as his operative technic is faultless, whose prognosis is as sound and his treatment as general and complete as his boldness and flourish are undaunted. And I do not for one moment undervalue the importance of correct technic and fearlessness with the knife, but I would make these things subordinate in the matter of a safe and desirable outcome in any given case to the vastly more important correct and perfect understanding of the matter in hand and what may rightly be expected as the best possible outcome, and the use of all the methods of the science which are applicable in furthering that outcome.

To illustrate: It sometimes happens in our hospital work that an operation is made upon a patient, who is found on the surgical side, whose history has been hastily taken by the house staff, and the attending surgeon has either carelessly confirmed the diagnosis made on the outside, or left it to be made at the operating table. The previous history of the case, the treatment up to the time of the patient's admission, are neglected as of but little import, and the whole welfare of the patient is placed on the result of the contemplated operation. This completed, too often it happens that the care and oversight of the surgeon in charge cease and the after-treatment, than which very often nothing is of more importance, is left to the mercy of the eager but inexperienced house staff.

Again, a minor case, a leg ulcer of long standing, comes to a clinic and, in spite of repeated and varied local treatment, or even thorough curetting, persistently refuses to heal, till, late in the case, it is discovered that the patient's urine contains sugar. Correction of the diet promptly and effectually supplements the surgical efforts, and the ulcer begins to improve.

Shock, following operation, is often over-treated, in the eagerness of the surgeon to be doing something, when the knowledge of the slow yet sure action of just enough medication, and a good deal of patience, will many times save a heart from giving out under over-stimulation. Proper preparation, and shortened time of anesthesia, both before and during the operation, will often forestall subsequent shock of operation.

Securing the best possible resistance is as important to the patient as performing the most capital operation.

It is often far better not to operate at all, as a last resort, when the knowledge that the chances are vastly against recovery will certainly satisfy the patient and his friends.

Again, the substitution of another and equally trying set of symptoms, subjective and objective, cannot be regarded as a cure, even though this state of affairs was obtained by an operation carried out under the most perfect conditions of asepsis and surgical technic.

Financial possibilities and urgency should

never influence the surgeon to operate upon his patient.

Better far a conservative opinion and a withholding of the hand than a patient maimed and suffering from the results of the most accurate but ill-advised surgical dissection (and never the pleasure of seeing one's case reported before the learned society).

Time and again kidneys are anchored, only to give as much pain as before, which might have been as satisfactorily, and with less trouble to the patient, secured by the good effect of a reasonable vacation, and the toning up of the tissues surrounding these organs.

Without doubt, the greater number of the members of this society rightly value every branch of our science, and there are few if any who would take other than a conservative view of any case presented to them. Still it is to be noticed that many cases, tired of the offer by reputable surgeons of operations as the only means of relief, turn for care and treatment to those less proficient in the surgical art who are yet endowed with an ability to view disease in a broad sense, and who, by patience and perseverance in non-operative treatment, further recoveries as permanent and as satisfactory as need be, in spite of the discouraging dictum of the too-ready operator. Pain in the side is not always appendicitis, and now and then the refusal of the patient to be operated is the first step toward a prompt recovery from a condition which was not surgical, though closely simulating the dreaded inflammation at McBurney's Point.

Care, great care and precision in diagnosis, is the first work of the true surgeon. The patient is, after all, to be considered above his disease, and a lack of interest, on the surgeon's part, following the expressed unwillingness of the patient to undergo operation, should often give way to untiring effort to relieve the condition short of operating, or at least to a willingness to follow the condition to the end, which may be a happy restoration to health. Here again may be mentioned the movable kidney and the prolapsed, but movable, uterus.

Constructive conservatism should be set over against destructive radicalism. Unless operative work is the only thing to be considered right for the best interest of the patient after the whole condition is surveyed in the broadest view, medically as well as surgically it is not to be advised, but it is to be advised against. Every case entrusted to the care of the surgeon should receive the most careful handling. Much can be accomplished by intelligent preparation and careful regulation throughout the course of a surgical procedure whether the case be operative or a fracture, a tumor, a bruise or a burn.

Anything that contributes to the patient's well-being and ultimate restoration to health must not be slighted as of no value. Nature is always and indefatigably at work preserving health. She is to be assisted intelligently in every effort.

Rest of mind and body, general rest and local rest, freedom from irritation, and cheer are of very great aid to prompt and continuous improvement; and when the time of convalescence approaches, that halfway condition of unstable equilibrium should receive the studious direction of the surgeon who would work the greatest good as the result of a surgical effort.

Take a case of bow-legs or knock-knees for instance: operate and straighten the legs; put on plaster and order the patient to bed for six weeks, only observing the temperature to note the absence of infection. Take off the casts and let the patient up to walk and you should expect to see the legs soon bending again; and yet it is not so very uncommon to see cases that have received just this treatment. Here a course of bone-building tonics and food for six months to two years would supplement the operative work and render that work satisfactory and perfectly remedial. The one way is bad, the other way is the best surgery.

Herniæ radically operated are often lost sight of till they recur for lack of careful attention; others, unoperated, are now and then as radically and as perfectly secured by a reasonable course of truss treatment.

In the matter of prognosis I believe that some stress may yet be laid upon conservatism. Not only that we may not too often be proven to have erred in fact, but that the patient and the doctor may be given the benefits of a reasonable conduct of a doubtful case, and the irregulars robbed of extravagant fees for work accomplished by the oil of time and the encouragement of non-operative work.

Lastly, in those cases where hope is lost and the end is near, the great surgeon may still exert a great and good influence, through doing nothing, in the assurance that his inactivity is of the same high order as in other cases a most heroic action would be, and looks only to the relieving of his patient from any added suffering.

TRANSACTIONS OF SOCIETIES.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, DECEMBER 19, 1905.

The President, J. W. FLEMING, M.D., in the Chair.

There were about 125 members present.

The meeting was called to order and the minutes of the previous meeting read and approved.

REPORT OF COUNCIL.

The Council reported favorably upon the following applications for membership:

Frederick J. Bruce, 246 Sixth Avenue.

Moses Kahn, 277 Graham Avenue.

Frederick Schroeder, Jr., 22 St. Marks Avenue.

James S. Slavin, 174 North Sixth Street.

Theodore L. Vosseler, 370a Monroe Street.

APPLICATIONS FOR MEMBERSHIP.

Applications have been received from the following:

Louis F. Light, Forest Avenue and Butler Street, East Williamsburg, L. I., Cornell, 1903. Proposed by William Pfeiffer, seconded by O. A. Gordon.

Henry Moses, L. I. C. H., 1904. Proposed by W. C. Wood, seconded by E. W. Vietor.

J. N. Teeter, 169 Washington Park, Bellevue, 1892. Proposed by Membership Committee.

William C. Stolworthy, 506 Ninth Street, N. Y. University, 1903.

George C. Owens, Kingston Avenue and Degraw Street, P. & S., N. Y., 1903. Proposed by J. A. Lee, seconded by E. J. Morris.

ELECTION OF MEMBERS.

The following, having been duly proposed and accepted by the Council, were declared, by the President, elected to active membership:

Charles Eastmond, 382 Adelphi Street.

Samuel K. Frost, 810 Washington Avenue.

Horace Greely, 147 Pacific Street.

James M. Kerrigan, 171 Gates Avenue.

John C. Merchant, 162 Engert Avenue.

Alexander Spingarn, 649 Willoughby Avenue.

SCIENTIFIC PROGRAM.

1. Paper: Medical Problems to be Solved by the General Practitioner. By Louis C. Ager, M.D. Discussed by Drs. Van Cott, Bristow and Wheeler. Closed by Dr. Ager.

EXECUTIVE SESSION.

In accordance with suggestions contained in Dr. Ager's paper, the President appointed Drs. Ager, Van Cott, Bristow and Wheeler a committee on the subject to report at the January meeting.

An expression of opinion being sought from the members of the Council as to the advisability of admitting to membership in the Society practitioners of medicine, graduates of eclectic and homeopathic schools, who renounce publicly the practice of sectarian medicine; after some discussion.

It was moved and seconded that the matter be laid on the table. Carried.

The following resolution was presented, and, on motion, duly carried, adopted:

Resolved, That the Council of the Medical Society of the County of Kings is hereby requested to co-operate in every practicable way with the efforts of the best medical journals throughout the United States to cleanse the advertising pages of the medical press.

The following notice of an intention to move at the annual meeting that the constitution and by-laws be amended was presented in writing by Dr. Bristow:

"I hereby move that the Constitution and By-Laws of this Society be amended, so as to be in accordance with the Constitution and By-Laws of the Medical Society of the State of New York, as adopted and accepted by this Society at a meeting held February 13, 1904."

The form of constitution and by-laws required by the Medical Society of the State of New York was read by the Secretary.

Dr. Browning moved that a copy of the proposed by-laws be sent to each member of the Society before the next annual meeting. Seconded.

Dr. Bristow moved to amend, with the view of saving expense, that these by-laws be printed in the next number of the BROOKLYN MEDICAL JOURNAL. The amendment was accepted by Dr. Browning, and the motion carried.

Attention being called by a number of members to inconsistencies between the by-laws as proposed by the Medical Society of the State of New York and those of the Medical Society of the County of Kings;

It was moved and seconded that authority be delegated to the Council to make such alteration in the new Constitution and By-laws as will avoid or do away with such inconsistencies. Carried.

NOMINATIONS.

The following nominations for officers for the ensuing year were made and duly seconded:

For President, William F. Campbell; for Vice

President, Glentworth R. Butler; for Secretary, John A. Lee; for Associate Secretary, William A. Jewett; for Treasurer, Onslow A. Gordon; for Associate Treasurer, John R. Stivers; for Censors, Julius C. Bierwith, Henry G. Webster, Thomas R. French, Ralph H. Pomeroy, John R. Kevin, James P. Warbasse, Robert E. Coughlin, William C. Woolsey, Henry C. Keenan, Robert T. Wheeler, Walter C. Wood; for Directing Librarian, James P. Warbasse, James M. Winfield; for Trustee, James W. Fleming.

Adjourned.

JOHN A. LEE,
Secretary.

Proposed Amendments to the Constitution and By-Laws of the Medical Society of the County of Kings.

Chapter I. remains unchanged.
Chapter II. remains unchanged.
Chapter III. remains unchanged.
Chapter IV. remains unchanged.
Chapter V. remains unchanged.
Chapter VI. changed to read as follows:

CHAPTER VI.

SECRETARY.

Section 1. The Secretary shall make and preserve the minutes of the meetings of the Society; shall conduct its correspondence; shall issue all notices of meetings; shall notify candidates of their election and members of their appointment on Committees or of their election as Delegates.

Section 2. He shall supply applicants for membership with the necessary blanks.

Section 3. He shall keep a roster of its members and of all other registered physicians of the county, in which shall be shown the full names of such physicians, with their addresses, the colleges from which they graduated, the date of graduation, the date of their license to practice in this State, and so much other information as may be deemed to be useful.

Section 4. In keeping such roster the secretary shall note changes in the personnel of the profession by death or by removal to or from the country, and in making his annual report he shall endeavor to account for all physicians who shall have practiced in the county during the year.

Section 5. He shall forward a copy of the roster of officers and members (list of delegates and list of other registered physicians of the county), to the Secretary of the Medical Society of the State of New York thirty days before the date of its annual meeting, and shall perform such other duties as pertain to the office.

Section 6. Clerical assistance, when necessary, shall be provided by the Board of Trustees.

Chapter VII. remains unchanged.

Chapter VIII. shall read the same, with the exception of Section 2, which shall read as follows: It shall be the duty of the Treasurer to present a bill of the annual dues to each member every year, including State per capita assessment, showing all arrearages, and to demand payment of the same, at least twice while unpaid, during the year in which such bill may have been rendered. For this purpose, the Treasurer is authorized to have the necessary blank printed, and to employ a competent collector.

Chapter IX. remains unchanged.
Chapter X. remains unchanged.
Chapter XI. remains unchanged.
Chapter XII. remains unchanged.
Chapter XIII. remains unchanged.

Chapter XIV. changed to read as follows: Section 1. remains the same.

Section 2 and 3 to read as follows:

Section 2. One delegate for each Assembly District in the County shall be elected at the annual meeting to represent the Society in the house of delegates of the Medical Society of the State of New York.

Section 3. One delegate from each hundred members or fraction thereof shall be elected at the annual meeting to represent the Society at the annual meeting of the District branch.

Add Section 4. The delegates shall be elected by ballot and the same by-laws shall apply as at the election of officers.

Add Section 5. At the first election held after the adoption of their by-Laws, half the delegates shall be elected for one year and half for two years and thereafter delegates shall serve for two years.

Add. Section 6. When a County Society is entitled to an odd number of delegates, this odd number shall be elected for two years.

Chapter XV. changed as follows:

Section 1 remains unchanged.

Section 2 is omitted.

Section 3 remains the same but becomes Section 2.

Section 4 remains unchanged, but becomes Section 3.

Section 5 changed as follows, and becomes Section 4: Each member shall pay annually the assessment levied by vote of the Society at the annual meeting, which shall be due on the first day of February, at the same time he shall pay the amount of the per capita assessment of the Medical Society of the State of New York, fixed by the House of Delegates for the current year.

Section 6 changed to read as follows, and becomes Section 5:

Section 5. All members who have not paid their annual County dues and State assessments on or before the first day of May of each year shall be placed on the list of members in arrears for dues and assessments and so reported to the Society at its next meeting, and shall not receive the publications, or notices of meetings, or defence for suits for malpractice until their dues are paid.

Section 7 changed to read as follows, and becomes Section 6:

Section 6. All members who fail to pay their arrears on or before December 31st shall be dropped from the roll of membership.

Section 8 remains unchanged, but becomes Section 7.

Section 9 dropped.

Chapter XVI has title changed to Membership.

Section 1 changed to read as follows:

Membership in the Medical Society of the County of Kings, the second District Branch of the Medical Society of the State of New York may be obtained by physicians in good standing, residing in the County of Kings and duly licensed and recorded in the office of the County Clerk of Kings County, State of New York, under the Constitution and By-Laws of the Medical Society of the State of New York, in the following manner:

Section 2 as follows:

Section 2. Applications for membership shall be made on blanks furnished by the Medical Society of the State of New York, signed by the applicant and endorsed by two members of the County Society. Such blanks shall be sent to the Secretary who shall present them, without delay, to the Board of Censors for investigation and report.

Section 3 remains unchanged.

Section 4 changed to read as follows:

Every person thus admitted resident member shall, within three months after due notification of his election, pay an initiation fee of five dollars and the assessment of the Medical Society of the State of New York for the current year (which shall relieve him from any further assessment until the next annual meeting), sign the By-Laws (Chap. vi., Sec. 3), giving his age, place of birth, and the name of the institution whence he graduated, and such data as may be required by Historical Committee or forfeit his election. (Chap. xx, Sec. 8).

Section 5 changed to Section 8, and new sections 5, 6 and 7 added as follows:

Section 5. Candidates duly elected shall qualify as members by signing the Constitution and By-Laws of the Society, District Branch of the Medical Society of the State of New York.

Section 6. All resignations shall be in writing and shall be sent to the Secretary and referred to the Council or the Society at its first meeting after their receipt. If accepted the member thereby severs all connection with the Society, the District Branch and the Medical Society of the State of New York and relinquishes all right and title to any share in their property. No resignation shall be accepted from a member owing dues or assessments or under charges.

Section 7. When a member removes to another county his name shall be transferred to the roll of members in the county of his new residence.

Section 8, which is old Section 5, remains the same.

CHAPTER XVII.

Section 1 remains in abeyance to await the action of the referendum.

Sections 2, 3, 4, 5, 6 remain unchanged.

Chapters XVIII, XIX and XX remain unchanged.

THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, NOVEMBER 21, 1905.

The President, J. W. FLEMING, M.D., in the Chair.

PAPER: THE STRENUOUS LIFE OF SCHOOL CHILDREN. BY WILLIAM P. NORTHRUP, M.D., NEW YORK, PROFESSOR OF THE DISEASES OF CHILDREN OF THE N. Y. UNIVERSITY AND BELLEVUE HOSP. MED. COLLEGE.

(*Abstract of Paper.*)

Dr. Northrup began his address by saying that the subject under discussion was one which comes near to being the most vital to us all. His remarks were in part as follows:

"This paper takes it into primary consideration that the child of the family is the one valuable possession. Former tribal conditions in which the child was relegated with hirelings and dogs to the corners and upper floors, have happily passed away. We are considering the beginning of systematic education, of mental discipline, the enlistment into a life of comradeship, of drilling in ranks, of comparing abilities and of testing strength. In its totality this is the time of life in which begins the building of the American citizen. Is there a more important function for the physician than the supervision of these ten years of life? Nobility of character obliges, likewise Americal citizenship. The public school is the maker of citizens. To us as physicians belongs the task of assisting the little volunteer to endure the strenuous life of camp and drill, and even to grow strong as the campaign goes on. It is only secondarily our function to look into the list of studies and requirements with a view to modifying them. Our department is wholly medical, or perhaps better, physiological. We should not wait till medicine is needed. The Twentieth Century call is for prophylactic measures. In school work we may not select. We must take all volunteers, and furthermore keep them able bodied. We must keep them fit for the firing line and return them veterans. They should even grow and get hard in the training. School life should teach them the care of themselves. Addition of fractions should apply also to the daily accumulation of knowledge and physical endurance.

In March the Pediatric and Neurological Clinics of New York receive a crop of worn-out school children—neurasthenics. My own experience is so annually regular that I have fallen into a routine method of impressing the case upon the students. A girl about 9 to 12 years old is brought by her mother to the Clinic on Saturday. As the girl stands in the amphitheatre she is seen to be pale and jerking. To you she obviously has chorea. "What is your name?" I ask. No answer, and she glances at her mother with an imploring look. "How old are you?" No answer. At this point there is room for a little manœuvering. I turn to the class, and begin something like this: "This little girl goes to school (a sidelong glance detects a light in her eyes), she can read pretty well and spell fairly," (a few jerks and grimaces, and a look at her mother). Then I add in positive tones and in rapid succession, "She stands at the foot of her class, and is frequently late to school." At this point the jerking stops, the grimaces cease, and with complete absence of all self-consciousness she flashes out: "No ma'am, I'm never late, and I'm *first* in my class." Here a reconciliation is effected and all are friends together. Further indirect question brings forth the fact that she sits not in the front seat under the eye of the teacher, but in the back row with the trusted one who have records to sustain. She hurries home from school, is never kept late, takes a few moments of out-door play because someone has prescribed it, runs home, curls up and studies hard until the evening meal. This meal she engulfs in the shortest possible time, slips off her chair, and is soon at her book again. She is the conscientious pupil. She studies until someone insists on her going to bed, and often continues to study after she has gone to bed. Early in the morning, after a night of dreaming over those awful fractions, our pale, jerking, grimacing girl awakes again to the strenuous demands, and studies until breakfast. One eye is on the clock—she must *not* be late. Her hair must be braided tight and her dress buttoned up the back before breakfast, for being late once would spoil her record. If she fears the clock is slow, and that her competitor across the street has already started for school, breakfast is the home stretch on which she can make up lost time. By long experience she learns what portion of the food on the table will traverse the upper digestive ways the most rapidly. Potato and gravy with a liberal wash of water or tea or coffee is the breakfast most approved by the record breaker. In an incredibly short space the child has finished her intake of food, and is ready for the start, and away she dashes like a fire horse on a hurry call.

The good girl has at last, after anxious and strenuous preparation arrived at school, and it proves to be by accurate time three-quarters of an hour before the bell, and fifteen minutes before the doors are open. Three-quarters of an hour before time, and all this race and haste, worry and running, but she keeps her back seat, and her record is unbroken!

This audience can easily imagine several physiological functions impaired by worry and haste, and some daily needs possibly postponed to Saturday and Sunday. You will wonder where the dweller in crowded districts may in such strenuous life snatch a few hours of tranquil daily recreation in outdoor sunlight, and how the nerves in this strenuous existence are to be daily nourished and rested. Alas, they are neither

rested nor nourished. They fall daily further into arrears. They may drag on till early spring, like our typical case. In March is the Feast of St. Vitus.

It is well to reflect on the critical physiological changes which our little student is undergoing between the ages of eight and thirteen. She is rapidly manufacturing new cells, she is building great additions in bone, muscle and glands, she is developing, training and disciplining her cerebrospinal and sympathetic systems. She is changing her milk teeth for tearers and grinders, preparing for heartier food. She is further developing a new function, passing from infant life to maturity, experiencing a change of such critical magnitude that all nature appeals to the generous impulses of human protectors to lighten her burdens, to safeguard the best interests of the buddling woman and future mother.

It is for others to discuss shortening the hours of study, or interrupting them with longer intervals of recreation. There are wise heads considering the subject. I can only say the present public school course and competitions give the sensitive, conscientious child a strenuous life. In every team the quicker horse jumps first, the willing horse foams under the harness. The scoldings administered to the dullards of a class pierce only the souls of the sensitive. The conscientious are hurt by reproaches intended for those whom they never reach. Our attention is not just now called to the lazy, the lethargic, the truant or robust. It is to the delicate, sensitive, conscientious little worker, whose sleep is impaired by dreams of lessons, whose nervous tension handicaps in the race, whose daily balance sheet of vitality ceases to show a balance against the income of nutrition. Gradual loss of strength reaches its climax, and results in the March crop of neurasthenics, the Feast of Chorea, Dance of St. Vitus.

Do not put the subject from you with the thought that this story of the overworked and under-nourished growing girl belongs to a big city, to the tenements and to ignorance. Would it were limited to them, for they are most teachable and quick to reform. If you look to your choicest families you will often find them getting up late, that breakfast is late, that the father rubs his swollen eyes, and scolds between his morning paper and his coffee because of this disagreeable rush and haste. His last night's nerves are disturbed by his child's early morning start. You will agree with me that in many of your most intelligent families the child's life and duties are not the first consideration of the parents. The child begins its strenuous life in unsympathetic surroundings, gets up a high degree of momentum in the midst of inertia. Only in Wall Street will nerves again be found so thoroughly atingle.

I have no patience with the parent who says in word or action "I will not put myself out for my child. My parents did not, and here am I. My comfort has been earned; I intend to take it."

The child's morning meal should be taken in pleasant surroundings, in cheery atmosphere. It should not be the scold hour, the clearing house of yesterday's grudges nor the dumping ground of ill humor. The child should have time to eat, time for reasonable preparation for school, and be sent off happy. It will pay the parent to do so. It will save the doctor's bill and save anxiety. It is an investment for the parent's future which not even the Equitable Life or Standard Oil can give. It pays immediately something, and promises sure paid-up investments in the near future.

Dr. L. C. Ager expressed himself as coming to the meeting with the expectation of hearing an arraignment of our present methods of public school instruction. Instead of that the reader of the paper seemed to be in entire agreement with those instructors who claim that the primary fault is with the home. That, the speaker said, is after all where we have got any vital improvement in present conditions. Dr. Northrup had described the typical overworked school child—the girl particularly—and when he came to point out the actual fault, it was not the work of the school that made the trouble, but the mental strain, the worry. We have got to begin with the parents, Dr. Ager said, and have the parents teach the children how to perform their work—how to make the best of their school work, and that, of course, could only be accomplished by very long and persevering effort on our part. There is no doubt but that many children in schools are overworked. It was not the actual work that they had to do, but the work that they attempted in trying to keep up with some other children who were perhaps a little better endowed mentally than they. It is the worry and competition that really is at the root of the trouble. He wished that Dr. Gulick's suggestion, that there should be some concrete resolutions made, would be carried out, and that there would be some effort to bring these suggestions before the public individually, that is the parents, in order that they may realize what their duty is and how they

should co-operate with the Board of Education in this matter.

MR. W. L. FELTER, Principal, Girls' High School, said that he wished first of all to express his undoubted pleasure in listening to a paper touching upon school life and lacking in any note of condemnation of Boards of Education and school boards and school teachers. It was a welcome, agreeable and hopeful sign, and showed that the pedagogue and the doctor are getting together, and when they do something is likely to happen. He wished also to say that his friend, Dr. Gulick, in the short time in which he had been in his present position, had already accomplished wonders in the upbuilding of the physical condition of the pupils in our public schools, and if his suggestions were endorsed by the members of the County Society and seconded by the Board of Education, the problem would be largely solved in the next decade.

We need first of all, the speaker said, an intelligent public opinion that will find expression in a right action of our Board of Estimate and Apportionment, a Board which holds the purse strings of the city. Dr. Northrup, in his excellent paper, commended the visits of physicians to the public schools and their examination of the eyes and ears and their giving of suggestions for treatment, so that the last stage might not be worse than the first. Those of you, Mr. Felter said, who follow the reports in our public press will recall that when the Board of Estimate and Apportionment had the last requests from the Board of Education before it, the item was put in: so many thousands of dollars for medical inspection. The Comptroller objected to it on the ground that it was of doubtful public expediency, and he doubted if the Board of Education should subject any children to an examination by a physician other than the one employed by the family. This was a step backward. He knew from personal experience of the valuable work which has been done by these medical inspectors, and he trusted that this body would make its voice heard in no uncertain note in approval of that portion at least of Dr. Northrup's report and recommendation, that this appropriation be restored.

The ambitions of the parents is one thing that must be kept in mind in considering this question. The speaker related a personal experience where he sent for a mother whose daughter was not cut out for high school work and suggested that it would be better if the daughter were put at some other line of intellectual activity, and she responded, "But I am determined to have one lady in the family." That remark had its humorous aspect in view of the fact that the Creator never intended the daughter for a higher education, and she was struggling hopelessly with her lessons. There was another aspect, he said, which is very fine, because it showed the unmistakable value on the part of the parent for a higher education and of a determination she had formed to give her daughter every benefit that education could confer. We find such cases arising continually where the parent is struggling against the foreordination of the Creator, and cases of breakdown happen as a result. Mr. Felter observed that all the references during the evening had been to breakdowns of girls. He supposed breakdowns on the part of boys were as rare as cases of elephantiasis. Now we will immediately, he said, being representatives of the stronger sex, lay to our souls the flattering unction that this is due to the fact that men are endowed with a large modicum of common sense, and being prudent men and seeing the evil of over study, that boys do not over study, that they learn how to cross lots and dodge corners and get over the ground in some way or other; but the other side to it is that women are endowed with keener sensibilities and keener sense of honor, that they are going to do their work even if they break down under it, and the fact remains that the girls are the ones who break down under the strain; they are the ones who go first to the wall in the general struggle for a higher education.

After being requested to discuss this question the speaker made some inquiry concerning the pupils who go to one school in this borough, and had a long conversation with a teacher of physical training who does first term work. She told him that 5 per cent. of the grammar grade schools in this borough are unable to take up high school work, either because of anemic conditions or because of arrested physical or mental development. That is a very large proportion. He said he did not believe it was as large as that, told her to go on with her work for another week and see him again. She came back and confirmed her previous statement, that in her judgment, so far as her experience for three years was concerned, she thought 5 per cent. were unable to go on with the work. She said "That is not all; after the girls have been here three or four months, I notice how they go down under the struggle; that is when it tells; that is when they come to school nervous, pale and excited."

You have got to do what you can with public

opinion, Mr. Felter said. Before intellectual advancement there must be a sound physical condition, and without it a girl had better go home and never go to high school. It is better to have a sound mind and body than go to high school and break down under the strain. Moreover this public opinion should assert itself in the making of the school curriculum. He was perfectly frank in confessing, that so far as his studies of pedagogy were concerned, he had yet failed to study a science of education. You have a science of medicine, he said, you know that given a certain patient, a certain medicine, such and such a disease, this medicine will produce certain results. We have no such science in education; we do not know. We give the same medicine to the same class of children and the results are as varied as the stars in the firmament. We have no established mode of procedure, but we are searching for it happily and we may discover it; in the meantime the children suffer; they are the ones who are experimented upon. Now, then, we can protest against this to the extent of insisting on certain things. First of all, that the class will be of reasonable size. It is so common for us Americans to hold up our chins, throw out our chests and speak of our great and glorious country and its grand institutions. Shall I take you back, the speaker said, to the time of St. John the Evangelist, nineteen hundred years ago, and point to the school where he received his education, and find 25 pupils in a class. Visit the schools in this imperial city, and you will find 50, 55 and 62 pupils in a class, and we are in the imperial city of the greatest nation on earth. Now it is time there was a reform in these things. It is time the necessities of the children were considered as of prime importance. It rests as much with the doctor to bring it about as it does with the pedagogue, for when we say that the class must be smaller we are immediately met by the financial argument, that already our public education costs 25 per cent. of the tax budget. The speaker said he was ready to defend the thesis at any time, that the money invested for public education is the best investment that one manifestly can make, and it is the investment that brings the largest return upon the investment.

We need also to make over some pedagogues. The Board of Education prescribes that there shall be a recess of so many minutes. When the speaker was a superintendent visiting some schools, he found strange ways of enforcing it; he found a school where the principal interpreted the rule this way; he dismissed ten minutes before twelve. The children were obliged to sit in crowded class rooms from 9 to 11.50, with little change in the recitation, because they were on the top floor and the problem of discipline seemed to be too great for that schoolmaster to handle.

When we have an aroused public sentiment, when parents are reasonably ambitious for their children, when Boards of Estimate are sufficiently generous and humane to give us classes of reasonable size, when grades of study are made with the sole purpose of benefiting the pupils, then we will have fewer cases of breakdown and we will have happier and brighter lives on the part of our girls particularly.

Dr. Le Grand Kerr stated briefly that it seemed to him that this meeting had resolved itself partly into an arraignment of the family physician; or rather his lack of duty performance to the child. One speaker laid the blame at the door of the home; at the parents' feet; and that was right. Another had said that it was due to a lack of properly guided public opinion, and that was right. Now what constitutes public opinion, he inquired. Simply an aggregation of the opinions of the heads of homes, so that practically when we teach in the home, we teach public opinion. Now what class of all men, the speaker queried, comes in closer contact with the head of the home than the physician, if he is doing conscientious, good work; and especially the man who has the interest of the children at heart. Where the fault probably lies is in our lack of courage to stand out for what we know is right and for what we believe. That was illustrated by Dr. Gulick in speaking of the school where they were threatened with being compelled to close their doors because of the parents' objection to the home work.

No public educator should allow a parent to dictate to him after having given years of study to his work. No physician should allow a family, or the head of a family, to dictate to him on medical matters. When you get to the point that the head of the family can influence your opinions for the sake of a dollar, then it is time you cut that family influence out. We ought to stand for what we know is right, for what we believe is right. If we believe that the whole wrong is in the nutrition of the child, and believing that, we attend to the nose, look after the removal of adenoids, the correction of refractive errors and all those things that go to hold a child back, if we believe that, let us stand for it. Then it will not

be long before the heads of families will realize that they are not doing right by their children; it will not be long before public opinion will be decidedly changed in favor of a more intelligent education of the child life.

Dr. W. P. Northrup, in closing, said that his paper was especially adapted to New York, Manhattan and Brooklyn, and the crowded areas of all large cities. The question might present itself variously at different localities.

The problem in down town, East Side New York was something he was familiar with. It was the problem of making American citizens out of many thousand newcomers each year. You know, he said, the variety of which I speak. If the city of New York is to be parsimonious in its handing out of money to educate these exiles from tyranny, who are ignorant because they must be, and who are most capable of learning, he thought it the shortest-sighted policy that he had ever witnessed. It was a beautiful thing to him to see these people struggling for a public-school education. How little they asked from the commonwealth! They wanted to read and write, and yet we find 62 children in a class. He knew much about these people, and his heart was full when he talked about them and their grievances, and you see to-night, he said, what the public are willing to give them. The Comptroller says no, and explains that the people do not want their funds to go that way.

We have a function, as physicians and medical societies, and we have a pleasant duty, Dr. Northrup said, and that is to help in every way we can to sustain the Board of Education. These gentlemen had been good enough to say that his paper had been temperate. It was temperate because he knew what they were trying to do. We can help them, we can tell them how many hours a child between 8 and 13 years of age should sleep. How much do they sleep? They should sleep half the time at least, as an offhand start. They should have a certain number of hours of recreation. How can they go and live in the back alleys and dark rooms at night, go to school, without any hour for recreation, and be good citizens and be anything else but poor, emaciated people? England to-day is educating mental defects and guarding the development of her mill workers. She is looking after the health of little school workers and the young children. He thought it a very good thing for the community to look after the children and see them grow big. These children, if they live at all, will have tuberculous glands and days of suppuration. They cannot grow big without the prime requisites of health, including recreation and rest.

The speaker begged the gentlemen to take some of the suggestions, made during the evening, to heart, to talk them over, and see if they could not form a commission, formulate rules and some concrete suggestion, whereby the Board of Education might help these children to continue living while they are getting an education. Give them a chance, he said. The doctor thought that it was the inherent privilege and right of every child that has come here or been born here to have a chance to live first of all and, second, get an education.

PAPER: A PLEA FOR EARLY OPERATIVE TREATMENT IN CARCINOMA OF THE STOMACH. BY GEORGE R. FOWLER, M.D.

Discussion.

Dr. Joseph D. Bryant, New York, said that he desired at the outset to thank the President and the reader of the paper and all parties concerned for courteously affording him the opportunity of being present on this occasion. There were many present, he said, whom he had known for years. There were, perhaps, many with whom he had more or less to do some years ago with their medical and surgical qualifications. Therefore he was disposed to speak on this occasion somewhat in the light of one who has seen much and heard much regarding the questions that were now before the Society.

There was little, indeed, to be said directly upon the statements which Dr. Fowler had made. It was difficult, indeed, for one to compress in so small a space so many trite truths as he had done in the speaker's opinion. There was little more that could be said except perhaps to emphasize in some ways the things which he had uttered, and finally to express a clear conviction as to the truths which he had stated. Dr. Bryant said that it seemed to him that this was not so much of a medical as a surgical night. He had been particularly struck with the fact that nearly every one who had spoken earnestly, had endeavored, and quite succeeded, in making an explorative incision into the Comptroller of the City of New York. He was decidedly impressed with the fact, too, that little effort had been made to make it other than septic in its character. He was disposed to feel that even cocaine had been ignored. as without the use of an anesthetic, it requires great moral courage for a man to withstand an operative process. He thought he might say, at the risk of digressing somewhat, that he, based

upon the statement just uttered, was inclined to approve of the technic for the purpose stated.

In speaking on the paper in question he said he would like to call attention to the fact that he believed, as Dr. Fowler had expressed himself, and as he thought every one present must concur, that an early diagnosis in malignant disease is absolutely essential for successful treatment. He did not know of any one who would presume to gainsay that statement, and he thought we should go further, and assure those who are afflicted, or their friends, that a much more successful outcome will result by this means. Now if this be so there is no argument that can be made as strong as the fact that prompt diagnosis is the most essential proposition in connection with the treatment of malignant disease.

The speaker said that he could look back a little way. He could remember when he was a medical student, that earnest discussions were entered into as to whether or not cancer was a local or general disease. Papers were read at that time as to whether or not cancer began and infected the system, or whether the system was first infected and cancer was the local result of the infection, and these different views were contested with considerable vigor. He could remember very well indeed when it seemed to be determined beyond gainsay, that cancer was a local disease, and almost invariably in connection with these discussions cancer of the breast was the object of comparison. Why? Because it made about one-third in the list of cancers occurring in the human race, and moreover it was one affecting the female sex, a sex prominent in all respects, so far as malignant disease was concerned.

He could remember well indeed when to remove a cancer of the breast promptly with one or two sweeps of the knife, was regarded as the ideal operation, indicating at all events a degree of expertness that many tried to emulate. He could remember perfectly well when the thought of removing infected glands in the axilla was not recognized. The breast was removed by a free incision, closed up and not including perhaps the entire gland itself, including only the growth. He added that possibly there were those present who might have witnessed these methods of practice.

Dr. Bryant could remember the next step in the proposition to the effect that operators would remove the glands from the axilla when they were determined to be enlarged, and over that step considerable contention occurred between those who approved and those opposed to it.

The next step was "I will not attack the axilla because I did not feel any enlarged glands there." The speaker said he heard the expression occasionally now as a dim echo of the past. Now and then he saw it practiced by those who are older even than he himself. The opposition did not represent surgical advance, but rather surgical indifference.

The next question, and the one he thought which had more than anything else to do with radical treatment in cancerous disease was the recognition of the fact that lymphatic glands may become infected in many cases before any increase in their size is apparent. Certainly there is an increase in size, which can not be distinguished by manipulation. He himself had many times subjected to microscopical examination lymphatic glands of the axilla in cancer of the breast that were impossible to determine before operation, and found them involved with malignant disease.

Then came the great educational point of the need of prompt operation in the absence of the least manifestation of malignant disease in the axilla.

The next question that came up was the length of time one might suffer from a localized malignancy in the breast without malignancy appearing in the lymphatic glands, microscopic or otherwise. How long this may be no person can tell. It does not lie in the power of man to determine the degree of malignancy of disease or how soon after its inception secondary manifestations can occur. It is a part of the vital process. Cancers differ from each other as much as men or persons differ from each other. Some are very malignant, some not.

This being the case, and it being the general law regarding malignant disease, it seemed to him that there can be no gainsaying the fact that prompt determination of malignancy by explorative incision and early operation, followed by prompt re-operation in instances of return, hold out the only chance we have at our command today to increase the rate of percentage of operative cure. Now, if such be the case so far as the breast is concerned, which was, as he remarked a moment ago, one of the best examples for consideration, especially when we recollect that unoperated cancer of the breast will cause death in about forty-five months as an average, prompt action should be taken. He was speaking of old figures now, but they were as good, as far as non-operation was concerned, now as before and, by operation in old times, but twenty months were gained by operative practice.

If this be the case as far as the breast is related, how is it regarding the stomach? Let us compare them. In the first place, it is an established fact in connection with malignant disease that, the richer the organ is in lymphatics, the nearer to it of lymphatics, the more vigorous the function of the organ, and the greater the freedom of its movement, the more prolific it is in propagating the disease which affects it; perhaps it can be illustrated no better than comparing the tongue with the roof of the mouth; one immovable, the other freely movable —sometimes unfortunately so. Malignant disease attacking the tongue rapidly progresses, produces secondary deposits quickly, and if at all successful in operative relief it must be promptly attacked. So far as the hard palate is concerned, it too should be promptly attacked; still the rate of permanent recovery in a fixed place of this kind far exceeds that of the movable tongue. The lymphatics are rich in both, but the chief reason, in his judgment, rested in the fact that the roof of the mouth is fixed, moves but little indeed, while the tongue, of course, is very loose in many respects.

Now turn and compare, if you please, the breast with the stomach. There is a time in the history of the female breast when its functions are very active; as during lactation. They can not happen much more than once a year, nor does it recur in many instances very frequently; six or seven times is a liberal estimate. About three times a day the stomach performs its physiological functions, and every time it changes its relative position, and also every time one breathes. We will not multiply instances; the stomach, as has been described before, is laden with lymphatics and it likewise has great burdens to bear, and we have substantially, as has been said, on the greater curvature of the stomach a lymphatic girdle with numerous lymphatic vessels; he thought if they were counted they would amount to thirty or forty. We have ten or twelve lymphatic nodes on the greater curvature principally toward the pyloric portion. We have rather more on the lesser curvature and, as Dr. Fowler had said, they were so arranged, with reference to their reception of the lymph products from the stomach, as to make it possible to draw a vertically clean line of demarcation between the cardiac and the pyloric portion in malignant manifestations.

Let us stop a moment, he said, and see what operative difficulties we have of the stomach. In the breast these lymphatic glands are distributed, in the cervical region, above and beneath the clavicle. It has been estimated that early in the history of this disease, whenever you have malignancy well marked in the axilla, in 6 or 7 per cent. of the cases the lymphatic glands will be found enlarged above the clavicle. Halstead has increased this percentage considerably by careful dissection of the tissues above the clavicle. They are easily removed. It is only by operating early that one can hope to forestall their malignance.

What differences have we so far as the stomach is concerned, as compared with the breast. In the first place cancer of the stomach is much more frequent than cancer of the breast. Cancer of the uterus is more frequent than cancer of the stomach; then comes the cancer of the breast. Frequency of cancer of the stomach, of course, may be estimated variously. Dr. Fowler had given some figures larger than those in his mind, 21½ per cent. in 30,000 cases of cancer estimated by Welch were cancer of the stomach. That is a prolific number.

Another interesting point is: Why is it difficult to operate successfully, or operate, we will say, on cancer of the stomach. There are two difficulties that are uppermost; first, extensive involvment of lymphatic glands, to say nothing of extensive involvment of the stomach by the cancer itself—that goes without saying. He was speaking more particularly of the lymphatic glands and consequent adhesions. You may have extensive adhesions without much lymphatic involvment; the reverse of this proposition may be true, but it is true that extensive adhesions and lymphatic involvment are often present is combating influences.

It is interesting to study the rate of mortality bearing on the question of the condition of the stomach. To quote again, the prognosis in cases of no operation, is 100 per cent. death. Nobody can gainsay that. In 1892, and in the presence of no adhesions 50 per cent. were successfully operated upon. He was not reciting this to tell what great success it was, but he was speaking of it particularly to show the importance of the complications as bearing on the operation—50 per cent. recovered in the presence of no adhesions. Sixty per cent. recovered in the presence of slight adhesions. In many adhesions 97 per cent. died, or to turn it around 50 per cent. died with no adhesions, 60 per cent. with slight adhesions and 97 per cent. with extensive adhesions. It is fair to say that 1892 is a long time ago in abdominal surgery. Later than this with no ad-

hesions 27.2 per cent. died, but with extensive adhesions 72.7 per cent. died. That is better, and so on from that time down to the present, down to the days of the Mayos, because they are doing greater work in abdominal surgery than any two men in the world. Mayo's (Wm.) last report, as he recollected it, was substantially as follows: Of the last 41 cases by Mayo's method (37 were cancers and 4 were ulcers), 13 recovered and one died, the last 11 recovered. Of 28 operated on by different methods 6 died, in the last 11 not one died. It seemed to the speaker that there are two things that it is wise to take in hand and adopt. First, remove malignant disease just as soon as possible and, second, employ the best technic. He was disposed to feel that the argument in favor of early explorative incision in cancer of the stomach as compared with cancer of the breast will be briefly stated as follows:

Cancer of the stomach is insidious. We may have carcinoma right in our midst. He might have one for aught he knew. Proof in the autopsy room demonstrates that persons die of cancer of the stomach without ever having symptoms of it. He stated that, he said, that to those who might have cancer and did not care to be bothered about it. On the other hand there are a large percentage of deaths, found on autopsy without being suspected as dependent on cancer. There is much danger in making an explorative incision. He had seen estimates to the effect that explorative incisions, as a rule, were attended with 2-per-cent. mortality, but he wanted to say that percentages and statistics have movable figures. You can depend upon them in a certain way, but they are not conclusive. They are evidence, but they are not proof. It is a difficult thing for a man, no matter how honest he may be, to accurately prove statements by statistics of his own collection.

Another statement he thought could not be gainsaid is, that when a cancer or tumor of the stomach can be felt, it is past operative relief. Yet how often we hear the internist say: "I cannot feel anything. If you can, let us see you find it." But that this is no proof no cancer is there has been demonstrated by autopsy. Early explorative incision is the only measure, and places the patient in a position to receive the entire benefits of operative practice now extended in operations on the breast. Sometimes you may meet a patient that may keep the fact to herself until the last moment and then ask you to express an opinion, requiring you to keep it to yourself, saying: "If it is cancerous I do not want to know it," and that often happens.

Another thing in the diagnosis of cancer of the stomach, one must know the nature and extent of it, and that can only be done by making an explorative incision, in his judgment, at the earliest possible moment.

Cancer of the stomach is more frequent than cancer of the breast. The secondary dangers of cancer of the stomach are greater than those of the breast. The lymphatic glands are near at hand, the associations which they have to deeper tissues are more important than they are in the breast. You can dissect and open the wound well, examine easily in the latter, but to work in the peritoneal cavity, with all of its risks and its possibilities, and in the glands associated with the pancreas, etc., you will have a greater task and a more dangerous one than with the breast.

Operative dangers, of course, are greater in operations on the stomach than on the breast. They will always be, and it cannot be helped. He meant by that they will always be greater because of the difference in environment and of the tissues, etc., but they are not near so great to-day as they were only a very few years ago, and there was no question in his mind, whatever, that as advances are made in technic and early diagnosis, the rate of mortality of operation in the stomach in selected cases (because if you operate early you can select the cases) will not be much greater than the former operations on the breast. In any event the danger for operation on the stomach is sure to be greater because of the associations he had already mentioned.

And the suffering is greater. He had not been able in the brief thought he had given to it to find any good reason why early explorative incision is not a justifiable measure with a view of diagnosticating the presence and extent of malignant disease of the stomach. He knew there were many excuses. He left this with the audience to conjecture, but at the same time he wished to emphasize the fact, that there is a broad difference between a reason and an excuse.

Dr. J. Fuhs thinks that early explorative abdominal incision is justifiable in certain cases of suspected malignant disease of the stomach, in which a diagnosis cannot be made by other methods. This operation is as justifiable as the abdominal explorative incision, in cases where the diagnosis is well established, and it is necessary to determine whether a radical or only a palliative operation should be performed. In almost all cases, in which this explorative opera-

tion has been performed, a satisfactory diagnosis was arrived at. Though the justification of abdominal incision is unquestionable, the patients frequently fail to avail themselves of its advantages. The explanation of this failure must be sought in the teaching of former times, and also in the slight benefit formerly obtained from it. It will require time until the public will understand the great advances recently made in this branch of abdominal surgery, and become aware of the superior results obtained by it. The question why so few cases have been operated at an early stage of disease can be partially answered by the failure of patients to seek medical advice during its incipient period. The very insidious onset and the mild character of the subjective symptoms, at an early period of this disease, mask the serious character of this affection, so that the physician is consulted at a comparatively late period.

Though there is no doubt that all other diagnostic methods at times fail to determine the presence or absence of malignancy of the stomach, they have, at other times, proven to be of great value. It would be a mistake not to avail oneself of these methods, and it is of great importance to make every effort to perfect these diagnostic means to the highest possible degree. There is, after all, some risk to open the abdomen, but this slight risk should be taken in case other diagnostic methods fail.

Dr. R. W. Westbrook said that the subject certainly required a good deal of missionary work. He only wished to emphasize the points which had been so well put by Dr. Fowler. It seemed to him, too, that any surgeon would differ from Dr. Fuhs as to the patient frequently refusing to permit these operations as recommended. It had been his own experience that the patient rarely objects when the matter is placed squarely before him, but that it is more often the medical man who retards the operative relief in these cases.

He could appreciate how the Mayos get their large number of well-selected cases. An average of a hundred cases a day of all kinds come into their offices, and experts carefully select those requiring operation, who are again passed upon by the Mayos themselves. There is no delay in medical wards. Very advanced cases are not subjected to operation. Cases of not extensive involvment in cancer of the stomach are treated by the method of partial resection.

The medical practitioner must not expect a radical operation to be done in cases where marked cachexia is present. Here the surgeon would better do a gastro-enterostomy and not assume too great a risk. The speaker had operated on one case which lived for fifteen months, and he has a case now living two and a half years after gastro-enterostomy, where there was marked cancer present, although the latter case is now failing very rapidly.

He felt that we must all do our share in impressing the lesson upon the professional and lay mind that explorative incision is done not to confirm a diagnosis of early cancer, but to make it. If this were well kept in mind, it would not be long before we would be able to show far better results in the operative treatment of stomach cancer.

Dr. G. R. Fowler, in conclusion, said that he rather felicitated himself in bringing here from the Borough of Manhattan, our eloquent and esteemed friend, Dr. Bryant, and he also felt if his paper had no other result than to bring out the discussion that it had, and to call attention in the minds of those present, to the necessity for early and watchful care of so-called cases of chronic dyspepsia in individuals who are on the down-hill of life, there would have been something gained, at least, from this meeting.

He was very far from decrying the methods of diagnosis as employed by the physician at the present day. There is no question but that they constitute a very valuable addition to the scientific work and literature of our profession. His claim, however, is that, valuable as they may be in making a diagnosis of carcinoma of the stomach, they are not valuable at the time when the surgeon may hope to cure the case by an operative attack, and that is the point that he had endeavored to emphasize. It is true, as Dr. Fuhs said, that one should attempt to make the diagnosis by laboratory test and by physical examination, but in a case of persistent gastric disturbance, which, as Dr. Bristow had remarked, may be due to an antecedent ulcer, it was, in his judgment, and he thought this dictum will be enforced in the future, that an exploratory operation is the only means of clearing up satisfactorily the diagnosis, and laying the foundation for proper treatment.

The operative procedure need not be long. An incision long enough to admit the finger will suffice to commence with; if glands are undoubtedly involved in the carcinomatous infiltration, they are easily palpable. In fact, under an anesthetic, they can often be felt without opening the abdomen, after the patient is fully anes-

thetized and the reflex spasm of the rectus muscle on either side has been abolished. With the finger feeling around the pylorus, tracing its way up to the region of the gall bladder, then toward the median line, and about the celiac axis, where the glands are placed, which in the vast majority of cases receive the first infection from the lymphatic, the exploration can be rapidly made, and if these are found to be undoubtedly involved, the case is hopeless, so far as an attempt at radical cure is concerned. In the cases of carcinoma of the breast, the existence of infected axillary glands, to an extent to be palpable, does not necessarily make the case hopeless, because these can be extirpated, but glands right up in the direction of the spleen are not accessible for removal, and the fact that these are implicated demonstrates to the surgeon that he must close the abdomen at once. The operation need not necessarily take more than 15 minutes if exploratory incision is followed and, if burned silver wire sutures are used to close the wound in the abdominal wall, the patient can be out of bed in a few days. This is the practice that he has followed with satisfaction.

THE BROOKLYN GYNECOLOGICAL SOCIETY.

STATED MEETING, NOVEMBER 3, 1905.

A. A. HUSSEY, M.D., EDITOR.

The President, J. O. POLAK, M.D., in the chair.

ECTOPIC PREGNANCY, COMPLICATED BY DOUBLE INTRALIGAMENTARY CYST.

DR. A. M. JUDD reported an interesting case he had this summer of an ectopic pregnancy of two months history. When he opened the abdomen he found as a complication a double intraligamentous cyst. The physical examination previous to operation revealed what was thought to a big mass of clotted blood behind the peritoneum lifting up the intestines. He found something that was considerably more difficult to remove when he got inside. There was nothing especially interesting about the history of the ectopic.

There was a considerable loss of blood. Each cyst held at least 16 ounces. The cyst on the right side was, after puncture and allowing escape of contents, stripped out after incising the anterior layer of the broad ligament. The left could not be so removed, but was removed by a triangular incision with the base at the upper side of the broad ligament and stripping out portions of cyst wall remaining, tying vessels as they were cut.

APPENDIX SURROUNDED BY OMENTAL ADHESIONS MISTAKEN FOR PYOSALPINX OF RIGHT SIDE.

DR. H. C. KEENAN related the history of a case that he had operated on last September. The woman came from Utica. She had been operated on six weeks before she came to Brooklyn. The day after she arrived here, he supposed, owing to the jolting of the train, she was seized with considerable pain in the lower part of the abdomen. When he saw her he made a vaginal examination and found a mass on the right side alongside the uterus. The history she gave was that the doctor had made an examination and said she had a pus tube or pus in the pelvis, and he opened it through the vagina and let out a considerable quantity of pus. The speaker made the same diagnosis that she probably had a pus tube that had been evacuated through the vagina, and filled up again and probably an appendix adherent. He operated on her the next day and found the ovaries and tubes perfectly normal. She had quite a long appendix, which was surrounded with omentum right alongside the uterus. There was no inflammation low down in the pelvis at all, absolutely none, but on vaginal examination there were the marks of an old scar where she had been punctured previously. The question in the speaker's mind, and which he tried to determine was where the pus came from that the doctor got there on the previous operation. She said she had been opened and drained for three or four weeks and pus came out right along. Everything was normal except the appendix, and it showed no signs of having been punctured or there being an abscess.

Discussion.

DR. W. B. CHASE said that Dr. Keenan's case suggested one which came under his observation eight or ten years ago. The trouble began six weeks before he saw the patient, and he raised the question at that time as to the etiology of the pus accumulation. This was the case of a woman about 40 years old. When she came under his care she had been sick some time with considerable fever. There was a large mass filling in Douglass cul-de-sac. It was a question whether that was pus or the breaking down of a blood clot; in fact he was not quite certain whether the thing was walled off or not. He aspirated the

case thoroughly and it contained a pint of pus, and that was the end of it. He expected it to fill up in a week or ten days, but she never had any further accumulation.

DR. J. O POLAK suggested that Dr. Keenan's case showed the recuperative powers of nature.

ACCIDENTAL HEMORRHAGE.

DR. JEWETT reported a case of accidental hemorrhage. The woman was a young primipara—most of these cases occur in multiparæ. She was very œdematous, and the urine turned nearly solid on boiling, that is, she had both acute nephritis, the result of toxæmia of pregnancy, and accidental hemorrhage. She had entered upon the eighth month of gestation.

At his examination twelve days ago she was very pale and exhausted, had suffered intense pain, the abdomen was extremely sensitive, very much distended, tense and hard. The child apparently was dead. The diagnosis had been made by the attending physician. The condition was bad for operative interference, but there was nothing to do but to evacuate the uterus. The internal os was effaced and the external os barely admitted one finger. Dilatation was begun with the Goodell and the Gau dilator and continued with the hand. Delivery was completed by version within fifteen minutes with apparently no laceration of the cervix. The child had evidently been dead for some hours. The uterus contained a large quantity of clotted blood, yet no blood appeared till extraction was begun. The woman made a slow recovery, but is now out of danger. The urine was almost suppressed; it picked up very slowly and three or four days after labor had become normal. There was no convulsion. Examination of the placenta showed that it had been detached over two-thirds of its extent by the rectoplacental blood clot.

ABSCESS OF THE OVARY.

DR. C. JEWETT related another case that he said might bear upon the subject of Dr. MacNaughton's paper, although of no interest except that it was an illustration of pus in the pelvis. It was a case operated upon a week ago. He found everything glued together, and there was an abscess in the right ovary. The adhesions on the latter side were comparatively recent. On the other side there was a cyst of the ovary containing thin cloudy fluid, and here adhesions were old and firm. There was but very little rise of temperature at the time of operation. He, therefore, closed the abdomen completely and the patient had recovered with practically no fever. The pus was of course sterile.

Discussion.

DR. J. O. POLAK stated that he had noted three cases of hemorrhages into cysts. Each patient prior to operation had albumen, which cleared up promptly on removal of the tumors. He did not know whether it was an accident or not, having had three in succession, or whether there was a causal relation between the hemorrhage and albumen.

DR. C. JEWETT answered that in the obstetric case the nephritis was a possible cause of the accidental hemorrhage. That is one of the assigned causes of accidental hemorrhage. The etiology is not very well defined.

Paper: PUS IN THE PELVIS. By DR. GEORGE MACNAUGHTON.

Discussion.

DR. C. JEWETT said that the first point that attracted his attention was the statement that pelvic pain is always an evidence of peritonitis, yet there may be vicious pain in the ovary or tube or uterine pain, without peritonitis.

The doctor stated that the urethra is the point in which gonorrheal infection is most prone to linger. He thought the chronic manifestations of gonorrhea were often more pronounced in the cervix than in the urethra. Speaking of the origin of these inflammations it may be noted that they sometimes arise from recrudescence of an old gonorrhea, provoked by traumatism. This may happen from the use of a sound or other instrument in the uterus. Again, we know that an old gonorrhea often lights up after labor. Cases of one child-sterility are thus explained. After labor or abortion in gonorrheal women the tubes may become sealed by upward extension of an infection which had not before reached the tubes.

With reference to the action of different organisms, no special distinction has been made in the paper. It is rare that gonorrhea produces peritonitis except when complicated with other organisms. As a rule gonorrheal infection in the pelvis tends to localize itself. This is true in great measure, too, of staphylococcus infection. While the gonococcus is the most common cause of pelvic infection, especially in the tubes, the most formidable is the streptococcus. This, if time permits, always leads to suppuration. Any of these organisms may travel along the mucosa, but the streptococcus usually spreads by the lymphatics. A peritonitis is rarely dangerous to

life till it rises above the pelvic brim and streptococcus inflammation is most prone to spread. The other infections have little tendency to spread. It must be remembered that it is not suppuration but toxic absorption that kills, and this occurs especially in streptococcic infection.

The subject is a large one and would admit of much more discussion than time permits.

With reference to treatment the rule is well established that virulent infections be drained from below. If further measures are required they may be carried out later. Old infections, as a general rule, are best attacked from above.

DR. H. C. KEENAN agreed with what Dr. Jewett had said about the difference in the modes of infection with the gonorrheal organism, the streptococcus and staphylococcus. He thought, in taking up this subject, it a very difficult thing to lump all the cases together as pelvic abscesses. If we merely examine these cases by vagina, and on finding that there is an abscess in the pelvis make it our whole point of treatment, that it shall be opened from the vagina, we are liable to grave mistakes, not only in the immediate result, but also in the ultimate result. He believed that if we find the etiology and operate according to the etiology rather than the exact anatomical findings, we will be more nearly correct. As the reader of the paper has shown, an abscess may be of puerperal or gonorrheal origin or traumatic, the latter probably being streptococcic in origin, or an abscess may originate from the appendix. Now, opening an appendical abscess through the vagina, if the pus has formed so low, may be a very good procedure, but he did not think that an appendix could be taken care of at the time that the abscess was opened. He thought that it would give cause for further trouble.

As far as abscesses due to the staphylococcus are concerned, he thought that they might be opened through the vagina. We have in the etiology a pretty fair method of telling whether a staphylococcus, streptococcus or gonococcus is at work. If we get a history of instrumentation, of labor or abortion, it is probably due to one of these germs, and the abscesses may be opened and the chances of nature curing the pelvic organs are very good.

On the other hand in the gonococcus, as he showed in his paper some months ago, the chances of the patient's recovering are very good; likewise the virulence of the pus is exceedingly different, according to the nature of the microbic cause. If we open a gonorrheal abscess through the abdomen and the pus gets over the peritoneum, there seems to be very little liability of general peritonitis, so he thought that to treat all cases as pelvic abscesses and not look a little further would be an incorrect method.

DR. V. L. ZIMMERMANN was inclined to take issue with Dr. Keenan in opening gonorrheal abscesses through the abdomen. He believed if we are sure there is a large collection of pus in the pelvis, it should be opened per vaginam, and he did not think you can always judge from the history as to the microbic origin of the collection of pus. He believed that it is usually necessary to do a laparotomy some time later, possibly six months to a year, because those patients who have had pus tubes and had them opened below, usually have pain until the remains of the tubes are removed.

DR. A. M. JUDD said that he understood Dr. Jewitt to say that the streptococcus was the most frequent cause of infection. In his experience the first in frequency is the gonococcus, second the staphylococcus, and third the streptococcus.

He agreed with Dr. Zimmermann in disagreeing with Dr. Keenan in regard to the method of procedure in these cases in effecting a cure. He thought they should all be opened from below, and if a secondary operation is necessary, to do it without the added danger, that would have accompanied a primary laparotomy, and he thought that Dr. Keenan would save more cases if he followed that plan out.

Typhoid fever in connection with pus in the pelvis had not been mentioned, the speaker said. He had seen in the last two years two cases treated for typhoid fever, one for two weeks and the other for nine days, in which the cause of the fever was pus in the pelvis. He opened them both from below. One case the day of operation had a temperature of 106 degrees, and the opening of the pelvic abscess caused a cessation of the temperature to nearly normal and an improvement in all the symptoms. He thought that many of these cases treated as typhoid fever, were, from the distinctive character of the pus obtained, undoubtedly appendical in origin. Many pus collections remain in the pelvis, he said, and are not discovered for many years after its initiation, and other cases are fortunate enough to have the pus discovered and removed.

A widening experience teaches one that each year he finds that he will make more (in proportion) posterior vaginal sections for the evacuation of pus cavities.

DR. W. P. POOL said that it seemed to him

there can be no hard and fast rule applied to an operation for pus in the pelvis. A recent experience of his bore out Dr. Zimmermann's contention that we must not regard the anatomical findings in these cases. He thought it is our experience frequently to find tubes, the seat of abscess containing perhaps a considerable quantity of pus, which are not particularly adherent to the tissues surrounding them, which are comparatively movable, and which it is perfectly possible to take out by abdominal incision without soiling the peritoneum, removing the entire trouble, while if such a condition is attacked from below the peritoneum must be more or less soiled.

This is the case of which he spoke. Having gone in through the vagina he found that the tube was free, although the seat of an abscess about the size of a Frankfurter sausage. He made an incision in the tube and evacuated the pus. It set up considerable pelvic inflammation, from which the patient made a slow recovery. At a subsequent operation which was necessary, it was found that adhesions had formed about the tube and throughout the pelvis, which made the operation more difficult. The patient's condition was very serious on several occasions, whereas he believed if the operation had been done by the abdominal route in the beginning this might have been avoided.

It is certainly true whatever the etiology of these infections may be, that in a great many cases of chronic pus tubes we find no infection whatever; that soiling the peritoneum can be done with comparative immunity, whether it has been of streptococcus, staphylococcus or gonorrheal origin, such cases having existed for months or years.

Dr. W. B. Chase said that the reader of the paper had described a number of different conditions under one heading, and that gave a good deal of latitude in the discussion. It makes some difference whether we start with the etiological or clinical aspect of the case, and it makes equal difference whether cases are chronic or acute as regards the question of opening from below or above.

There is a field for opening abscesses through the vagina. He thought in cases of inflammation of the pelvic cavity following abortion or labor, where the patient was seriously ill, if we find pus there it would require a good deal of courage to enter the peritoneal cavity from above. When fluctuation can be felt there, as in these acute cases, if we open the peritoneal cavity, we may disseminate the infection and put the patient in greater jeopardy.

There are cases of acute salpingitis of a condition of virulence that makes the patient very ill, and if we were uninformed of the cause of the infection we might hesitate as to which method we would take, because if a recent infection the end of the patient might be worse than the first.

There is another condition in which we are in doubt whether the fluctuation in the pelvis is due to pus or blood clot breaking down, an old hematocele or a tubal pregnancy which has ruptured into the broad ligament. When these cases go on to suppuration he thought there we would be reluctant in attacking them from above.

The speaker could hardly conceive that we would have occasion to open an abscess due to appendicitis through the vagina, and yet that thing might happen. Two months ago he saw an appendix, which appeared in an inguinal hernia, so that the hernia was made up entirely of the appendix and cæcum.

By a careful study of individual cases, Dr. Chase said, we will be able to reach a conclusion, which will reveal the more conservative method. When we drain from below whether pus is in the tube or walled off, we may get a cure and we may have to operate later on. The lives of many patients have been saved in acute conditions by evacuating an abscess from below, and then afterward meeting the indication by an abdominal opening, if required. The other cases require careful study, and our method of attack and procedure will depend entirely on the question of diagnosis and the form and method of infection, as far as that can be ascertained.

Dr. Carroll Chase said that a leucocyte count might differentiate pus from blood clot in the pelvis, and also make diagnosis possible between typhoid fever and pus in the pelvis, should such an unusual question arise. A careful study of an accurate temperature chart will tell a good deal, the temperature in conditions in which pus is present usually being irregular, while in typhoid, and certain other conditions, it is more or less definitely regular.

Dr. J. C. MacEvitt said that he found, as a rule, that where we have pus in the pelvis, where it can be felt and is subperitoneal, that it is due to staphylococcus or streptococcus infection as a result of labor, abortion or instrumentation. In cases of the kind where you can detect fluctuation, he thought it is advisable to open through the cul-de-sac or in the inguinal region. There are many

cases where there are different foci of infection due to the lymphatics, into which the pus cavities unite and present in the inguinal region, as well as in the lower pelvis. In such cases it is well to attack through the inguinal region without entering the peritoneum cavity. The folds of the broad ligament and peritoneum are elevated by this constantly increasing formation of pus, and it is an easy matter to make your incision almost parallel to Poupart's ligament and enter the pus cavity.

In all cases of acute gonorrheal infection, where there is an active inflammatory condition, he thought it advisable to attack through the pelvis, but where there is a history of six months or longer, by all means choose the abdominal cavity, for the reason that it does away with the necessity for a future operation, and you completely eradicate the source of the trouble, and the complication, caused by the infection. It is easiest to operate through the vagina; with your finger enter the tubes, irrigate and wash out the pus, but the adhesions still remain, and it means a long convalescence and sometimes a secondary operation.

This was very forcibly demonstrated to him last Saturday. He operated at St. Mary's Maternity Hospital on what he first supposed to be a pelvic abscess. He elected the abdominal route. It was interesting in the fact that the two pus tubes were removed intact filled with pus. There was a large cystic ovary the size of an orange on one side, and on the other the ovary was adherent to the tube and cystic as well. Besides the appendix, which was about six inches in length was attached to the ovary on the left side. In a case of that kind, how could he accomplish a cure in operating through the cul-de-sac? In a case like this where we have a long-standing infection, it is not only justifiable in operating through the abdominal cavity, but obligatory. In a paper presented by Dr. Keenan a short time ago, the mortality in these cases, operated at St. Mary's Hospital, was something like 2 per cent.

Dr. C. Jewett said he hoped the statement that the colon bacillus was a prominent cause of pus in the pelvis would not go unchallenged. It is very doubtful if suppurative pelvic peritonitis is produced by the colon bacillus alone. What we get from the colon bacillus is adhesive peritonitis, but not pus. Uncomplicated infection by this organism results in little exudate of lymph or serum, seldom or never pus, and very moderate, if any toxæmia. Nor is the *origin* of tubal or ovarian disease to be referred to the bacillus coli, even though that organism be found in the pus.

Dr. A. M. Judd stated that Stimson took up the subject of colon bacillus infection some years ago. He had a number of cases of death due to peritonitis. His investigations showed that the cause of the peritonitis, which was of a low grade, was the bacillus coli communis.

Dr. W. E. Butler said that this subject had been discussed pretty thoroughly a number of times in the Society, that the original infection caused a peritonitis and adhesions of the parts to the intestine, and after that occurred we had a migration of the colon bacillus. That was not the primary cause. The colon bacillus is found very rarely in pure culture; it is always found in connection with other organisms, particularly the staphylococcus. First an infection through the tubes by the staphylococcus or through the lymphatics by the streptococcus, then adhesion to the intestine, and then a migration of the colon bacillus, but always in conjunction with other organisms.

Dr. J. O. Polak thought the members had been a little unfair to Dr. MacNaughton, because they had confused some of his statements. We all agree that acute puerperal infections, which cause pus collections in the pelvis are best treated by the vaginal route, and that the acute exacerbation of a gonorrheal infection causing pelvic peritonitis with pelvic abscess, is also best treated by this route, but in chronic cases in which the abscess is found as a tubal or tubo-ovarian abscess, whether it be post-partum, post-operative or gonorrheal, such a case is better treated by the abdominal route. The question divides itself into the treatment of abscesses in the pelvis in acute cases, or acute exacerbations of chronic cases or chronic cases.

Regarding the etiology he did not think there is any question that the majority of these cases are due to the gonococcus, and in these we usually have an infection that isolates itself in the tube, with more or less adhesive peritonitis, and it is one that quiets down if left to itself, in other words outlives its virulence. If mixed with the staphylococcus from instrumentation, from arrested or disturbed menstruation or abortion or the introduction of anything that brings the staphylococcus or streptococcus, we have a pelvic abscess as a complication.

The colon bacillus cannot produce by itself a peritonitis.

Regarding the blood count in the diagnosis of pus cases. It is worthless in chronic cases; it is

worthless in differentiating between pus and blood in cases without temperature or other clinical signs of differentiation. It is of use during the acute stage of an acute case. After the pus has been isolated in the tube by the lymph, the blood count again becomes practically worthless. On the other hand, during the acute stage of an infection the differential count is of particular value.

DR. ZIMMERMANN had brought up the question of the election of tube over gauze drainage. He had used both, and had come to the conclusion that gauze drainage, if used after the manner of Pryor, *i.e.*, placing a number of rolls of gauze behind the uterus, so that we have a wide vaginal opening and spreading the gauze out in the abscess cavity behind the uterus, which isolates the uterus, when the trouble is not completely localized, that in that way we get absolute drainage. It is his habit to leave the gauze in eight or ten days and draw out on the fifth or sixth day the middle roll of gauze. We do not need to reintroduce gauze, and the patient makes an uninterrupted recovery, as far as his personal experience has been.

DR. G. MACNAUGHTON concluded the discussion by saying that in the matter of pain he referred to inflammatory troubles in the pelvis more particularly, not cystic degenrations of the ovary, etc. Of course, acute pain may occur in these conditions and periodically recur, but in inflammatory diseases of the pelvis he believed pain is due to the accompanying peritonitis.

In regard to the invasion of the gonococcus first in the urethra he believed that statement is true, and he believes it remains longest at that particular point. That is a matter of some observation, and he was inclined to think that there are some authorities who agree with him.

The speaker said he had no expectation of going up from the vagina through a clean peritoneum to reach a floating pus tube. That, of course, would be the height of folly, but he meant a pus collection that can be reached through the vagina, and he should not wait for fluctuation pockets. There are any quantity of these cases that are enclosed in a very thick pus wall, sometimes a quarter of an inch thick, and you have to go through that mass before reaching the pus. These cases do very well—most of them get well. He has drained ovarian abscesses where they did not reach down into the pouch in that way that have done very well.

As to the appendix causing pelvic abscesses, he thought that is not an infrequent cause. He had seen quite a number of them, and the case that was related by Dr. Keenan was a very instructive one—that evidently was not due to any tubal disease whatever. The probabilities are that the cause of that pelvic abscess was in the appendix. He had seen some of these cases operated on afterward and found that the appendix was a primary cause, and he had operated on quite a number that have not subsequently required an abdominal operation and have remained perfectly well since. Dr. MacNaughton believed in considering the presence of pus in the pelvis, that it is always well to remember the appendix and very often it is possible to single out the appendix as the cause of the trouble.

THE BROOKLYN SURGICAL SOCIETY.

REGULAR MEETING, NOVEMBER 2, 1905.

The President, T. B. SPENCE, M.D., in the Chair.

NECROSIS OF TIBIA.

DR. J. M. DOWNEY presented a female patient aged 14, who came to him November 26, 1904, complaining of a pain along the tibia due to syphylitic osteomyelitis. The leg was swollen and tender and her temperature was 102 degrees. December 10th he made an incision, exposed the periosteum and found some slight necrosis. The bone was curetted. April 28th he again operated and removed a sequestrum which measured four inches in length; in thickness it comprised the entire diameter of the bone, nothing being left but the posterior part of the periosteum. There is some necrosis now at the ankle and near the knee. The cavity filled up in a remarkably short time. She has been receiving constitutional treatment during the period she has been under observation.

PROLAPSE OF THE RECTUM.

DR. J. M. DOWNEY said that in reporting this case of prolapse of the rectum, his idea was to call attention to the Tuttle operation. This method is applicable to all prolapses of the rectum beginning below the recto-sigmoid juncture, that is, the first and second degrees of complete prolapse.

The patient, a female child, five years old, was operated upon by the speaker January 30th. The usual incision between the anus and coccyx was made and extended to the tissues between

the rectum and sacrum; the rectum was separated from the sacrum for about six inches, the length of the protruding gut. The sacral tissues were gently curetted to freshen surfaces for union with gut. The rectum was invaginated through the semicircular incision and drawn down as far as possible. The external posterior surface of the gut was rubbed with gauze sponges, five long silkworm gut sutures were passed through the muscular wall of the gut, each suture taking a good-sized bite about one inch apart. The ends of the sutures were carried up through the wound after the Tuttle method on each side of the sacrum. A buried chromo-sized gut suture was passed around the rectum at the upper margin of the external sphincter with a moderate amount of constriction. The semi-circular incision was closed so as to bring the ends of the recto-coccygei and external sphincter muscles together. The patient made an uneventful recovery.

The last examination of the rectum, which was made October 8th, nine months after the operation showed no return. Recently Dr. Downey has operated upon another case after the same method, but it is of such late date that he thought better to report it later.

THE MEDICAL SIDE OF SURGERY.

DR. WILLIAM S. HUBBARD read a paper with the above title, for which see page 17.

Discussion.

DR. J. D. SULLIVAN thought the paper opportune, and that probably some of our eminent surgeons might not; but he believed there was room for consideration of the subject. The point that the speaker would make particularly is that surgeons, as rule, and surgical text-books, pay more attention to the pathology of surgical disease and the technic of operation than they do to the patient. Here is a point in which the physical and dynamic condition of the patient should be taken into account in relation to the operation just as much as the procedure itself; *e. g.*, the condition of the blood, the condition of leucocytosis or phagocytosis, the alkalinity of the blood and how near the blood is to the normal state. He thought these are points that should be brought in, and it is possible an operation might be averted, postponed or possibly made safer by taking these matters into consideration before the operation. The condition of the patient and not the surgical disease alone should be studied in all cases.

DR. H. B. DELATOUR judged from the silence of the gentlemen that most of those present felt in sympathy and in accord with the paper as presented. He did not think there was any room for question, that for a man to practice surgery, it was equally requisite that he should know some medicine as well as to be versed in surgery. We all see to-day the younger men as they are leaving the hospitals and starting in practice striving for a surgical career. It seems to them to be the brightest career. Those who have been in practice for a number of years, while they hear surgeons spoken of in the highest terms, hear the family practitioner spoken of in equally high terms, and there can be no question that the medical practitioner is just as useful to the public at large as the surgeon. For a man to practice surgery with success and with justice to his patient, it is necessary that he should have some medical training and experience. For a man to branch out into the full-fledged practice of surgery without any previous family practice or a good hospital experience on the medical side, he thought entirely wrong.

Again, a man who is practising medicine and posing as a medical practitioner and consultant should equally be versed in the possibilities of surgery. We will hear men make the statement that they have never seen a case of appendicitis that required operation, that they have treated numbers of cases of appendicitis and never lost a case, and they have never had a case operated on. Now, if a man knows anything about these cases, if he will go to the hospitals and see these cases operated on, he will soon change his mind, because he has had demonstrated to him the actual conditions that take place; therefore, Dr. Delatour believed it just as necessary that the medical man should be versed in the possibilities of surgery and what can be done in surgery, as it is absolutely necessary that the surgeon should be versed in medicine and be able to make his differential diagnosis between a truly medical condition and a surgical condition.

DR. W. C. WOOD said that most of us could plead guilty to the statements made in the paper. He knew he, for one, could do so. He believed we could all agree with the last speaker in regard to the wisdom of a medical experience to one who expects to do surgery, in fact he would go still further than the author in one particular. Assuming that a man's time is mainly devoted to the actual practice of surgical work, and that his intimate knowledge of medical cases has ceased ten years or so previously, there are a great many things in medicine with which he is now un-

acquainted that have come to the front and that are especially important since the days when he was doing an active medical practice. He thought one fault of surgeons to-day is that they do not continue to study that branch of medicine which is of great importance in their work—medical diagnosis. There had been published in this town, within the past few years, a book on the "Diagnostics of Internal Medicine," which, it seemed to him more important for the surgeon to know than many of the latest works on surgery itself.

There are some places where the profession in this town to-day lean too far, he believed, to conservatism. He would speak only of one line of case—the treatment of fractures. Active, energetic, positive and perfect reduction of fractures is not carried out with the enthusiasm and care, by the profession as a whole, that the condition warrants and that modern surgical principles teach. While he believed sometimes we are too bold, he thought, on the other hand, we are often too conservative, and surgeons even in the practice of surgery to-day, more especially along the one branch which he had mentioned, are erring too far on the side of unwise conservatism.

LYMPHŒDEMA FOLLOWING REMOVAL OF LYMPH NODES OF GROIN.

DR. W. L. DUFFIELD reported the case of a man, 30 years of age, civil engineer by occupation, who was admitted to St. John's Hospital August 13, 1905. Four weeks prior to admission he burned the dorsum of his left foot on a hot pipe on an automobile. This was followed by a blister which refused to heal. Three weeks later he noticed a painful lump in the left groin, which proved to be a suppurating gland, though not broken down.

On the day prior to admission the foot was thoroughly cleansed and put up in a wet bichloride dressing. The wound was apparently perfectly clean; in fact only a very small raw area over the base of the great toe was to be seen. On the following day the inguinal glands were dissected out without rupturing them, and the wound was closed. The foot was again inspected, the raw area curetted with a gauze sponge and dressed. Two days later the patient had a rise of temperature, the wound was very much inflamed and all the lymph channels of the leg and thigh injected. The wound was opened and dressed daily until August 26th when he was discharged from the hospital with a clean granulating wound.

One week later the patient was taken with a severe chill lasting most of the night, and when seen the next morning the thigh was swollen, of brawny hardness and brownish in color, extending from the patella to Poupart's ligament and almost entirely around its circumference. Daily dressings of hot antiphlogistine were used with some relief, and it was noticed that the hardness and induration of the thigh decreased in proportion to the amount of a thin, limpid, straw colored fluid, that was discharged from the lower angle of the wound at about the site one would expect the severed lymph vessels to be after the removal of the glands. The recovery was uneventful from this on, the wound healing, and a slight amount of induration only remaining about the middle of the inner surface of the thigh.

(To be Continued.)

In the *British Medical Journal*, Dec. 2, 1904, Arthur E. Barker, F.R.C.S., Prof. of Surgery, University College, London, published a second paper on beta-eucain and adrenalin in infiltration anesthesia. The technic is that previously described; but he has modified his solution to the following: Distilled water, 3½ ozs.; beta-eucain, 3 grains; sodium chloride, 12 grains; 1:1,000 adrenalin solution, 10 minims. The whole quantity can be used in an ordinary case, if necessary, and is quite sufficient for most. But he has often injected twice as much when large areas had to be dealt with, and never saw ill results from 6 grains beta-eucain and 20 minims adrenalin. The sodium chloride renders the solution isotonic with the blood, preventing pain from the injection. The adrenalin enhances the duration of the anesthesia; eucain alone anesthetizes only for about 15 minutes, while the combination produces an anesthesia lasting 3 or 4 hours. But it is more slowly produced when adrenalin is also used; and it is therefore well to wait some 30 minutes after injection before all larger operations, to allow insensibility to develop fully.

Barker never saw any depressing effects follow, although in several exceptional cases up to 6 grains eucain were injected. To judge from the reports of those who use cocain for local analgesia, the contrary is the case, and they recommend the subcutaneous injection of strychnin, the use of camphor and other stimulants during operation. They also insist that the patient should be kept quietly in a horizontal position for some hours after operation. With eucain, Barker's patients have taken no harm from walking away from his house, even when it was used freely; and in the hospital no after-treatment was necessary.

Brooklyn Medical Journal.

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THE STATE HOSPITAL AT FLATBUSH.

Conditions are favoring the probabilities of an early renovating of the Long Island State Hospital for the Insane at Flatbush. This institution was for the first fifty years of its existence the Kings County Insane Asylum. Latterly it has been under State control, though still receiving a large part of the insane patients from this borough.

The most important reason for the continued maintenance of this institution in its present locality is that it furnishes a receiving hospital for the insane within easy reach. This is desirable especially in the cases of injured or sick insane patients. It is likewise desirable in the cases of certain of the very poor who desire to have a member of their family who is adjudged insane committed to an institution where he can be easily reached without the entailment of traveling expenses.

Since it has been decided to maintain this institution it is necessary that it shall conform to a modern model in regard to plumbing, ventilation, abundant sunlight, and in equipment with later-day methods of treatment with baths and electrical devices.. This it is now proposed to accomplish; not by an entire demolition of the old building, but by remodeling and by the addition of floor space, and perhaps the addition of two or more buildings for the housing and residence of the Superintendent and assistant officers. It is to the credit of the original designers and builders that this institution, which now houses some 1,200 patients, lends itself even to some extent to capabilities of remodeling. It is believed that the outside walls which are exceptionally heavy and firm can be used without any alteration. Interior partition walls will be torn down so that where there are now small separate rooms large pavilions will be created, which will be better ventilated and better fitted to improve the welfare of the patients, besides furnishing considerable greater floor and air spaces.

Some thirty acres in title of the institution are likewise taken over by the State. A large part of the former will still be utilized to provide employment in gardening and other crafts to the able-bodied patients, who will be likely to be benefited thereby. It is perhaps well that the decision, to maintain the old institution, for the reasons given above, has been reached. Its accessibility to the medical profession of the borough is a consideration also not without advantages to the patients as well as to the students of mental ailments.

The plans seem to have been carefully prepared by the Superintendent; they are admittedly urgently needed, and, since it has been decided to maintain them, Representatives of this borough in the State Legislature should exert themselves to secure the necessary renovation.

MEDICAL NEWS.

EDITED BY CLARENCE REGINALD HYDE, M.D.

It is earnestly hoped that all members of the profession possessing news concerning themselves or their friends, which would interest others, will communicate the same to the News Editor before the 9th of each month. Items for this department should be sent promptly to Clarence Reginald Hyde, M.D., 126 Joralemon Street.

Dr. John J. Wagner has removed to 28 Seventh Avenue, formerly the residence of the late Dr. George Wackerhagen.

Dr. Lewis N. Foote has returned to this city and resumed his practice at 147 Hancock Street. He will devote special attention to diseases of the stomach, liver and intestines.

Dr. Jerome B. Thomas, L. I. C. H., 1892, is in town and devoting his attention to diseases of the eye and ear, in which he intends to specialize on his return to Los Angeles, California, where he will practice.

Dr. Edwin H. Fiske, announces the removal of his office to 91 Lafayette Avenue.

Dr. Charles Dwight Napier, of Bedford Ave-

nue, has been invited to give the course of lectures on Orthopedic Surgery this winter at the Long Island College Hospital in place of Dr. Richard W. Westbrook, resigned.

A barber in Germany was recently heavily fined for not having sterilized his razor before shaving his customer.

Dr. John E. Jennings has removed his office to 164 Halsey Street.

Dr. Joseph J. O'Connell, formerly of Remsen Street, who has been abroad for the past three years for his health, has returned, and intends to resume the practice of medicine.

Dr. William Pool, of 147 Clinton Street, has resigned from the gynecological clinic of the Polhemus Dispensary. His place has been taken by Dr. James Watt, of 174 Clinton Street.

Dr. James S. King has removed to 839 Park Place, near Nostrand Avenue, and will conduct a private sanitarium at that address.

Professor Behring was recently asked by Dr. Bernheim for some of his bacillus preparation, mentioned at the recent Tuberculosis Congress, for human experimenting, but the professor declined to supply it, and gave his reasons for his refusal in a long letter. Professor Behring says the preparation cannot travel without losing efficiency, and that he has commanding reasons for not revealing the method of preparation. Further, the professor deprecated its employment in human experiments before the lapse of a year. Dr. Bernheim has expressed dissatisfaction with Professor Behring's attitude.—*Exchange.*

The Long Island Medical Society has elected the following officers for 1906: President, Edward E. Cornwall; Vice-President, W. Carl Schoenijahn; Secretary, John E. Jennings; Treasurer, Walter D. Ludlum. Dr. William A. Tomes, the retiring President, was elected to the vacancy in the Board of Trustees. The Society will continue its policy of meetings in charge of sections of different members. Each meeting will be a symposium on some special subject. The annual dinner of the Society will be held the first Tuesday in February as heretofore.

Prior to the talk on Japan recently at the Kings County Medical Society, Dr. and Mrs. Arthur C. Jarrett entertained the guest of the evening, Dr. Suzuki, Surgeon-in-Chief of the Imperial Japanese Navy, at dinner at their residence. There were present besides, Dr. Takamene, Drs. George R. Fowler, Lewis Pilcher, John A. McCorkle, James W. Fleming, Henry De Forest, James Warbasse, Colonel Austin, of the 13th Heavy Artillery, N. G. S. N. Y., General Pearson, President of the Army and Navy Club, and Messrs. Fields, Fromme and Harry Leal.

The Jewish Hospital fair netted $52,000. The expenses were $12,000. It is the intention of the Board of Trustees not to open the new hospital, corner of Classon and St. Marks Avenue, until every debt is paid.

On December 18th, at the Historical Hall, on Pierrepont Street, Mr. George Kiernan gave "The Cricket on the Hearth," in aid of the Guild of the Long Island College Hospital. About $500 were netted.

A. Ross Matheson, M.D., having resigned from the attending Staff of the M. E. Hospital, has been elected Consulting Physician. The other Consulting Physicians are Alfred E. M. Purdy, M.D., and William H. B. Pratt, M.D. At present L. Bolton Bangs, M.D., is the only Consulting Surgeon, the place of Nelson L. North, M.D., deceased, not having been filled as yet. Department of General Surgery, Surgeons-in-Chief: Lewis S. Pilcher, M.D., George Ryerson Fowler, M.D., Henry Beeckman Delatour, M.D. Attending Surgeons: James Peter Warbasse, M.D., Thomas Bray Spence, M.D., Charles Howard Goodrich, M.D., Russell Story Fowler, M.D., Walter A. Sherwood, M.D., Paul M. Pilcher, M.D. Department of Pediatric Surgery, Surgeon-inChief: John Bion Bogart, M.D; Attending Surgeon, Arthur Henry Bogart, M.D. Department of General Medicine, Physician in Chief, Glentworth R. Butler, M.D. Attending Physicians: Ralph M. Mead, M.D., William Nathan Belcher, M.D., Raymond Clark, M. D. Department of Laryngology, Attending Laryngologist, Purdy H. Sturges, M.D. Special Consultants, Laryngolist, Thomas R. French, M.D; Ophthalmologist, J. Scott Wood, M.D.; Otologist, J. E. Sheppard, M.D.

The death of Dr. Ezra H. Wilson, of 194 Keap Street, is a distinct loss to Science. Dr. Wilson was born at Port Jefferson, L. I., in 1858, and was in his 48th year at the time of his death. He was graduated from P. and S. in 1882, afterwards taking a P. G. course. For several years later he was interested in Hospital work in St. Catherine's and the Bushwick hospitals until his connection with the Hoagland Laboratory in 1891, when he became associated with Sternberg in bacteriological and pathological research. Later he succeeded Dr. Sternberg as Director, and was made bacteriologist of New York City. Up to the time of his death he was interested in trying to obtain an anti-toxin for

typhoid and hoped soon to succeed. His death will be regretted by all who personally knew him. He was a Fellow of the Royal Microscopical Society of London; honorary member of the Society of Military Surgeons, member of the Medical Society of the County of Kings, member of the Brooklyn Pathological Society, member of the Associated Physicians of Long Island, consulting bacteriologist and pathologist to the Kings County Hospital, St. Mary's Hospital, St. Catherine's Hospital and the Eastern District Hospital. Dr. Wilson was also a member of the Hamilton Club.

The Committee on the Prevention of Tuberculosis of the Charity Organization Society has issued a circular calling the attention of the medical profession of the City of New York to the consequences arising from the practice of sending poor consumptives to such states as Arizona, Colorado and California. Quoting from the circular, "Extensive experience has taught us that, difficult as it may be for a poor man to recover from tuberculosis in this city, he is better off here among his friends and relatives, where there are more adequate hospital and dispensary facilities, than he is far from home, where he is thrown entirely upon his own resources and where the great number of consumptives willing to work at the lowest wages make the finding of employment, especially of suitable employment, almost impossible. Favorable results from climate can hardly be looked for unless at least $10 per week can be spent for board and lodging. The stranger, who has spent a large part of his savings on railroad fare, soon finds himself without work, living in the poorest rooms, eating the scantiest and cheapest food. The practice of advising the removal to other climates thus defeats its own aims and casts upon the charity of other communities a burden which they should not and cannot sustain. We invite the co-operation of the medical profession, therefore, in preventing persons suffering from tuberculosis from being sent to other States unless: (*a*) They are physically able to work and have secured in advance a definite assurance of the opportunity to perform work of a proper character at wages sufficient for their suitable support; or, (*b*) Unless they have at their disposal at least $250 in addition to railroad fare."

Dr. Theodore Weicker, President of the firm of E. R. Squibb & Co., the well-known manufacturers of drugs in this borough, denies most emphatically that the company intends to leave Brooklyn. The report probably gained ground because the Squibb Company recently purchased a tract of forty-five acres in North Brunswick, N. J., with the intention of building upon it an extensive factory additional to the Brooklyn plant. The new factory simply marks an enlargement of the plant to meet an increaseing demand.

Owing to a mistake, a detailed account of the dinner to Professor Charles Jewett was omitted in our last issue. The affair was a testimonial dinner tendered to Dr. Jewett by the Staff and Board of Directors of the Bushwick Hospital, at the "Assembly," Saturday, November 25th. The following toasts were responded to: "Bushwick Hospital," Robert H. Roy; "Our Future and its Possibilities," Dr. Elias H. Bartley; "The Hospital vs. the People," Charles Melville Weeks. Among those present were: Doctors Alderton, Butler, MacCumber, Chapman, Little, Rushmore, J. W. Hyde, Browning, Fuhs, Bogart, Clark, Bartley, Bodkin, Fairbairn, Cox, Bristow, Schelling, Schauf, Williams, H. F. Jewett, Lincoln, W. A. Jewett, Matson, Wilson, Brundage and W. F. Campbell, Messrs. Levi, Wilson, Hotaling, Weeks, Roy and Watkins. The program was in the nature of a souvenir, with the picture of Professor Jewett on the cover.

A most interesting exhibition was the recent "American Tuberculosis Exhibition," at the American Musuem of Natural History. The ground floor of the west wing had been set apart for the display of models. Toronto, Canada, had on exhibition the model of a tuberculosis sanatorium. Scattered about the room were models of sanatoriums which are in use in the different States, as far west as Colorado. Chicago sent on models of her hospital buildings for treatment of the disease. Pennsylvania also had a fine exhibition, and New York State had a large model of the tuberculosis sanatorium at Raybrook, in Franklin County, which has been in operation two years. New York City showed how it took care of its tuberculosis patients in tents on Blackwell's Island and in other places. There were also several different models illustrating the "tent cure" and the fresh air cure. The model tent showed how the sick person can breathe fresh air in unlimited quantities night and day. There were also on exhibition models of improved tenement houses, which are a feature of the general plan to prevent the spread of tuberculosis. The idea of those tenements is to admit plenty of air and sunshine. In the room was also a specimen of the old time dark bedrooms, which the people conducting the exhibition say are re-

sponsible for a great deal of the tuberculosis in the city.

A number of influential men of the medical and clerical profession have decided to ask for subscriptions to create an open-air sanatorium for consumptives at Medford, L. I. There will be 160 acres, which can be purchased for $1,500. It is intended to erect a home which will enable hundreds of the 10,000 consumptives in Brooklyn to secure rest, medical attendance and proper food and freedom from polluted city atmospheres. Brooklyn at present has only 233 hospital beds for those suffering from phthisis.

John D. Rockefeller's Christmas gift to the cause of medical education is the Rockefeller Institute for Medical Research, to which he has given $3,000,000. The new buildings, which will be ready for occupancy the first week in January, are at East Sixty-sixth Street and the East River, the site including twenty-six city lots and being a part of the old Schermerhorn farm. Appointments on the staff of the laboratory will be announced soon by the board of directors, and, although it is believed that the principal work will be done by its own staff, the institute will continue to aid investigation in other laboratories in this country and Europe. There are now twenty men working under the auspices of the institute outside of New York. Grants of money are made to students in medical research.

Fearing the proposed tuberculosis hospital of New York City, residents of Staten Island, where the building is to be erected, have formed a protective association. The city has already appropriated $2,000,000 toward building this consumptive sanatorium. The purpose of the protective association is to ask the Legislature for a law preventing the erection of such a hospital in any city of this State and to apply in the Supreme Court for an injunction to prevent the beginning of building operations. Many prominent residents of Staten Island attended the meeting last night. Lewis Nixon, the shipbuilder, sent a cable dispatch from Russia, which was read at the meeting, and which urged Staten Islanders to take all possible steps to stop the erection of the hospital.

That the Board of Health has reduced the death rate from tuberculosis by 20 per cent. in the last decade is one of the opening statements of the third annual report of the committee on the prevention of tuberculosis of the Charity Organization Society. This city, says the report, leads the world in the number of its deaths from consumption and the number of its consumptive patients, although it has not the highest death rate. No other city does so much for its consumptives. The Charities Department maintained 3,959 patients in its own hospitals in the last year, and paid for the treatment of 788 patients in private institutions each month.

Following are the officers of the Woman's Hospital Society, N. Y., for 1906. President, George H. Mallett; Vice-president, Dougal Bissell; Secretary and Treasurer, Reginald M. Rawls; Executive Committee, George Tucker Harrison, LeRoy Broun, and Edward W. Pinkham; Editor, Herman Grad. For the January meeting, the paper of the evening will be "What Macroscopical Appearance of the Ovary Warrants Its Removal?" by Dr. Bache Emmet. Meetings of this Society are held the fourth Tuesday of each calendar month, except June, July, August and September, at the residences of members. The society now numbers thirty-seven members, all graduates of the Woman's Hospital, N. Y.

The Long Island Medical Society, at its annual meeting, in December, elected as officers: Edward E. Cornwall, President; W. Carl Schoenijahn, Vice-president; John E. Jennings, Treasurer, and William E. Ludlum, Secretary. Executive Committee, Lefferts A. McClelland, Stephen H. Lutz, and William Austin Tomes, the latter in place of Arthur C. Jacobson, term expired.

Dr. William A. Tomes, the retiring president, was elected a member of the Board of Trustees. The society will continue its policy of having each meeting in charge of a different section. Dr. Cornwall will aim to make each meeting somewhat of a symposium. The Society will hold its annual dinner the first Tuesday in February, as usual. The dinner committee is composed of Dr. Robert J. Morrison, chairman, and Drs. Charles D. Napier and William S. Hubbard.

BOOK REVIEWS.

DIABETES MELLITUS: ITS PATHOLOGICAL CHEMISTRY AND TREATMENT. Lectures delivered in the University and Bellevue Hospital Medical College, New York; Herter Lectureship Foundation. By Professor Dr. Carl von Noorden. Translated by Florence Buchanon, D.Sc., and I. Walker Hall, M.D. (*Part VII of Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition.*) New York, E. B. Treat & Co., 1905. 211 pp. 8vo. Price: Cloth, $1.50.

This book contains the lectures delivered by the brilliant Physician-in-Chief of the City Hospital in Frankfort-on-Main, at the University and Bellevue Medical College. These lectures constitute without question the finest monograph on the subject of diabetes that has yet been written, especially from the therapeutic aspect. G. R. B.

A Text-Book of Practical Therapeutics, With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc. *Eleventh Edition, Enlarged, Thoroughly Revised and Largely Rewritten.* Philadelphia and New York, Lea Bros. & Co., 1905. ix, 17-910 pp., 1 col. pl. 8vo. Price: Cloth, $4.00; leather, $5.00; half Morocco, $5.50.

Hare's "Therapeutics" is so well known, and its practical value so thoroughly demonstrated by the law of the survival of the fittest, that the appearance of the eleventh edition does not call for special remark. It has been revised to accord with the new U. S. Pharmacopœia. G. R. B.

The Principles and Practice of Medicine: Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D. *Sixth Edition, Thoroughly Revised from New Plates.* New York and London, D. Appleton & Co., 1905. 11, vii-xvii, 1,143 pp., 8vo. Price: Cloth, $5.50.

Whatever may be said—and unluckily there is much—in derogation of Dr. Osler as a therapeutist, no one will gainsay his great ability as a diagnostician and pathologist. The volume under consideration took its place from the first as a standard, and any one who is sufficiently curious may readily note its influence in the majority of Practices which have since been published. As imitation is the sincerest form of flattery the work needs no further encomium. G. R. B.

Therapeutics: Its Principles and Practice. By Horatio C. Wood, M.D., LL.D. *Twelfth Edition.* Thoroughly Revised and Adapted to the Eighth (1905) Edition of the United States Pharmacopœia, by Horatio C. Wood and Horatio C. Wood, Jr., M.D. Philadelphia and London, J. B. Lippincott Co., 1905. 11, v-xxxviii, 907 pp. 8vo. Price: Cloth, $5.00.

This book has become a classic, not only by virtue of the more than thirty years of its existence, but also by its scientific and practical value. It has been thoroughly revised, and more than seventy new drugs have been added for consideration. It is a help to have the relatively unimportant material printed in small type; the essentials, in larger type, readily catching the eye. Its publication has been delayed in order to conform its statements with those of the U. S. P. of 1900. This volume is one of the indispensables for the therapeutist. G. R. B.

Practical Massage in Twenty Lessons. By Hartvig Nissen. Philadelphia, F. A. Davis Co., 1905. 168 pp., 1 pl., 12mo. Price: Cloth, $1.00.

This is a small, but good and practical, treatise on a very useful therapeutic resource. Most of the illustrations are crudely drawn, but sufficiently intelligible. The descriptions of movements are clear and concise. G. R. B.

Clinical Methods: A Guide to the Practical Study of Medicine. By Robert Hutchison, M.D., F.R.C.P., and Harry Rainy, M.A., F.R.C.P.Ed., F.R.S.E. *Ninth Edition.* Chicago, W. T. Keener & Co., 1905. 11, xii, 634 pp., 4 pl., 3 col. pl., 16mo. Price: Cloth, $2.50.

This book, by British authors, has deservedly reached its ninth edition. It contains an uncommon amount of well-stated and reliable information in regard to the practical methods of investigating medical cases with reference to diagnosis. It is thoroughly worthy of its popularity. G. R. B.

Superstition in Medicine. By Prof. Dr. Hugo Magnus. Authorized Translation from the German. Edited by Dr. Julius L. Salinger. New York and London, Funk & Wagnalls Co., 1905. ix, 205 pp. 12mo. Price: Cloth, $1.00.

This is an interesting little book, defining medical superstition and its relation to religion, philosophy, natural science, and medicine itself. G. R. B.

A Practical Treatise on Sexual Disorders of the Male and Female. By Robert W. Taylor, A.M., M.D. *Third Edition, Thoroughly Revised.* New York and Philadelphia, Lea Bros. & Co., 1905. 11, vii-xv, 17-525 pp., 6 pl., 10 col. pl., 8vo. Price: Cloth, $3.00.

To the member of the medical profession interested in genito-urinary diseases, the books by Dr. Taylor need no introduction. The third edition shows the results of careful revision and simplification. Four new chapters have been added, namely, Pruritis of the Vulva, Herpes Progenitalis in Woman, Gangrene of the Vulva, and Injuries to the Female Genitals in Coitus. Of the newer sections incorporated in the text, the following are among the most important: Florence's test for semen; composition of normal prostatic secretion; organic stricture of the urethra and aspermatism; intertesticular anastamosis of the vasdeferens for sterility; tuberculosis of the testicle and the X-ray; cancer of the penis and the X-ray and the radium rays; oczoospermia due to X-rays. The volume is well made and copiously illustrated, and may be endorsed as a useful one to the genito-urinary surgeon, and to the general practitioner. Charles S. Cochrane.

Ophthalmic Neuro-Myology. A Study of the Normal and Abnormal Actions of the Ocular Muscles from the Brain Side of the Question. By C. C. Savage, M.D., Nashville, Tenn., The Author [c. 1905]. vii, 221 pp., 8vo.

Considerable stress is placed upon the importance of locating the interior pole of the eye.

In most cases, this pole is situated on the nasal side of the center of the cornea. This displacement is suggested as the reason for subtracting .50 from the reading of the ophthalmometer, when with the rule, and adding .50 when against the rule. This theory of displacement conflicts with the usually accepted explanation, namely, the existence of lenticular astigmatism.

This latest work by Savage will be appreciated both by ophthalmologists and neurologists. James W. Ingalls.

Color-Vision and Color-Blindness. A Practical Manual for Railroad Surgeons. By J. Ellis Jennings, M.D. *Second Edition, Thoroughly Revised.* Philadelphia, F. A. Davis Co., 1905. Col. front., xi, 132 pp. 8vo. Price: Cloth, $1.00.

The author has succeeded in putting into compact form the essential facts regarding color-blindness. The historical section is replete with interest. Dalton, in 1794, described his own defective color-sense. About three-quarters of a century later, Wilson, of Edinburgh, pointed out the dangers arising from having color-blind employee's on railroads and steamships. No action was taken until 1875, when a serious railroad disaster occurred in Sweden. The accident was mainly due to the fact that one of the men was color-blind. Soon after, the Swedish government compelled railroad employee's to submit to examination for color-blindness.

The second, third, fourth and fifth chapters are mainly devoted to theoretical considerations. The remaining half of the book relates more particularly to the practical side of the subject. Complete details of the various methods of testing are given. The work will be of special value to those engaged in examining men for public service. James W. Ingalls.

Operative Surgery: For Students and Practitioners. By John J. McGrath, M.D. *Second Edition, Thoroughly Revised.* Philadelphia, F. A. Davis Co., 1906. xiv, 628 pp., 33 pl., 7 col. pl., 8vo. Price: Cloth, $4.50; half Morocco, $5.50.

The popularity of this work is attested by the appearance of a second edition, thoroughly revised, with much new matter added. One of the excellent features of this work is the thorough manner in which the author describes the surgical anatomy of a region before discussing its operative possibilities. All the standard operations are discussed in a concise and practical manner. Excellent illustrations elucidate the text.

This work is a valuable guide to students or practitioners pursuing a course in operative surgery. William Francis Campbell.