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CLASSIFICATION OF INFLAMMATION OF THE UTERUS AND ITS RELATIONS TO CIRCUMUTERINE INFLAMMATION.*

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Inflammation broadly defined as the reaction which living tissue exhibits to morbid irritation may include a wide variety of lesions. Some of these lesions have been variously and vaguely designated as chronic metritis, sub-acute metritis, sub-inflammatory states, irritative states and congestive states. This broad definition, however, is not intended to include neoplasms, although the division between some neoplasms and inflammatory formations may at certain points be arbitrary.

The study of metritis is the study of the anatomy and physiology of the uterus as modified by inflammation. It is important therefore to keep in mind not only the anatomy and physiology of the organ, but also, if we are to consider the subject in its relations, we must also keep in mind the anatomy and physiology of the uterine appendages, pelvic cellular tissue and other circumuterine structures.

The most significant factor in metritis is the endometrium. It presents in the developmental and atrophic changes of puberty and the menopause, in the vascular changes of the menstrual ebb and flow, widely and constantly varying states. Inflammation of the uterus may occur during infancy before the endometrium has matured, during puberty when it is maturing, during maturity when it has reached its full physiological significance, during the menopause when it is undergoing permanent retrograde changes,

* Read before the Chicago Gynæcological Society, November 20, 1896, as a part of a symposium on metritis.

or during senility when, in the physiological sense, it has forever disappeared. The occurrence of metritis under such diverse conditions partly explains the wide and variable range of its phenomena, the difficulty of description, and accounts for some of the confusion of classification and nomenclature which runs through the literature.

CLASSIFICATION.

The classification of a subject is largely a matter of the point of view. There is probably no other subject in medicine upon which so many diverse and irrational points of view have been taken. Science has been defined as knowledge classified according to law. The literary classifications of inflammation of the uterus are often wanting both in knowledge and law. The following attempts may be considered :

I. *The etiological classification* is based upon predisposing causes, such as parturition or traumatism, and upon the bacterial causes ; we therefore have gonorrhœal, erysipelatous, traumatic, puerperal, metritis, etc. The difficulty, however, in differentiation between many causes which may occur in any one case renders almost useless the etiological classification as a clinical guide. A bacteriological classification has been attempted, but our knowledge is not yet sufficient to make it adequate as a therapeutic guide. In the mean time we may distinguish between different bacterial causes and adjust the treatment accordingly. For example, a streptococcus infection might indicate the removal of the uterus, while a milder infection might call for curettage or for no treatment at all.

II. *The pathological classification*, so called, into catarrhal, suppurative, granular, hemorrhagic and ulcerative metritis is rather a designation of certain phases of the inflammatory process than a classification.

III. *The anatomical classification* includes endometritis, myometritis, perimetritis, corporeal, cervical, parenchymatous and glandular metritis. If these varieties usually occurred as distinct circumscribed lesions instead of complicating one another, if each could be known by its own peculiar symptom group, if ordinarily one could be clinically separated from the other, the anatomical classification would not be, as it is, impractical, impossible and misleading. Endometritis, for example, cannot long continue without involvement of the myometrium, and *vice versâ*. In either form there will be congestion and consequent increased secretion through the glands. The glandular structures therefore may be involved. Metritis includes the peritoneal covering of the uterus, and usually extends beyond

the uterus. There are no sharp clinical lines of demarcation between the anatomical divisions of the uterine and peri-uterine inflammation.

A further study of the routes of infection will show that not only the different parts of the uterus but the uterus itself and its surrounding structures are in close anatomical, physiological and pathological relations with one another. These elaborate attempts at definite classification, therefore, even though diagrammatically attractive, are clinically impossible.

To illustrate the absurdity of the attempted classifications of the metritis, observe the following from an otherwise excellent modern treatise. This work classifies metritis into (1) acute inflammatory, (2) hemorrhagic, (3) catarrhal, (4) chronic painful. In the first division the word inflammatory is tautological. Any of these so-called varieties may be hemorrhagic, catarrhal or painful. It is possible, therefore, to retain of this classification but two words—acute and chronic.

The current nomenclature of the subject, although not the outgrowth of adequate classification, is yet indispensable as a means of naming certain forms and phases of metritis. Such words as gonorrhœal, glandular, hypertrophic, interstitial, parenchymatous and catarrhal are convenient for purposes of description. The word endometritis, for example, must be used to describe, not a distinct lesion independent of the rest of the uterus, but rather an essential part of uterine inflammation. In this way we shall not lose sight of the clinical relations between the various forms and phases of metritis.

Let us now raise another question relative to the looseness and confusion of the current classifications. The term simple inflammation as distinguished from septic, for example, has no definite clinical meaning. A mild inflammation is usually called simple, a virulent inflammation, septic. We know that an inflammation, seemingly very mild, may readily take on a decidedly infectious character. It is a question whether a simple reparative process should be called inflammatory at all. To designate an intense inflammatory process as complex instead of septic would be no more vague than to call a mild inflammation simple. Until such words as simple can be clearly defined and clinically utilized it is better to avoid them. We may think of the inflammatory process in several ways: 1. As having gone only into the congestive stage. This would be a mild form but not to be described as simple. 2. As having gone on to the stage of effusion or suppuration.

This, especially if it involved much systemic disturbance would often be called septic. When did it become septic? 3. As being the result of a mild or virulent infection. Is it simple in the one case and septic in the other? 4. As occurring in structures of greater or less resistance. What is there in such conditions to designate on the one hand as simple, on the other as septic? In the present state of our knowledge we must use for descriptive purposes an adaptable and therefore flexible nomenclature. We may, however, simplify the subject of classification by throwing out such vague indefinite words as simple.

The distinction between acute and chronic inflammation, since these conditions enter extensively into the pathology of the disease of women, is most important. Many deny altogether the existence of chronic inflammation, for example, of the endometrium. Some attribute the condition which is usually classed under that name to congestion; others call it a sub-inflammatory state. We shall avoid the question whether certain conditions should be called congestive, inflammatory or sub-inflammatory. The discussion of this question is long, tiresome and unprofitable, a contest largely of words. The following outline of some of the phenomena of inflammation will help to make clear the distinction between acute inflammation and what we shall call chronic inflammation.

The inflammatory reaction which living tissue exhibits to morbid irritation is, first, defensive and then constructive or reparative. The defensive process is an effort to circumscribe the disease by throwing around it a limited wall of inflammatory exudate; the morbid action thus confined and concentrated within narrow limits is within these limits more or less intense and destructive. It may result in the sacrifice of a part for the safety of the whole. The force of the disease is spent in the destructive process, and may be active only or chiefly within the limiting wall. Finally normal conditions of nutrition are established, the constructive or reparative process becomes active and the limiting wall is absorbed. If the constructive process continues until repair is complete and then ceases, the part will resume its normal functions; the inflammation will be at an end.

Acute Inflammation.—If the infection is of such virulence or of such character as to call forth the defensive processes just described and to produce blood stasis with more or less severe swelling, pain, heat and redness and finally to produce local destruc-

tion, the inflammation is acute. The disease may terminate with resolution or go on to suppuration.

Chronic Inflammation.—If the irritation is of minor intensity or in any other way of such character as to fall short of provoking much defensive action, there will be little or no limiting wall and consequently no intense destructive process concentrated within a circumscribed space ; heat, swelling, pain and redness if present will be more diffuse and less pronounced. Under these conditions there is a minimum of defence and an excess of construction, and the inflammation is chronic.

Chronic inflammation may follow acute inflammation or may have been chronic from the beginning. The excessive constructive action which belongs to it explains the hyperplastic and hypertrophic results of so-called chronic metritis. It also explains certain morbid nutritive changes in the blood vessels and lymph vessels of the pelvis and in the cellular tissue of the pelvis. Sclerotic disease in other organs offers a close analogy.

It is unprofitable to speculate on the question whether the conditions just described under the name chronic inflammation would be better classified as congestion or as sub-inflammatory states. They are recognizable under either of these names. They occur more frequently in neuropathic women, and especially in cases of various diatheses, anæmia, lithæmia, gout, struma, cholæmia. Diabetes is also a strong predisposing cause. They are usually less dangerous to life and often more destructive to health than the acute inflammations. They constitute a large proportion of the ailments of women and include some of the most distressing ailments. They are persistent and hard, often impossible, to cure. In such cases it is often difficult to draw the line between these congestions which fall short of inflammation and actual inflammation. One of the most common forms of uterine catarrh is that which occurs in women of deficient eliminative power ; that is, the bowels, the kidneys and other eliminative organs fail to throw off sufficiently the waste products ; then the mucous glands of other organs whose function is not excretory may vicariously undertake to make good the deficiency. An infinite amount of misdirected and injurious local treatment is constantly being applied to these cases.

The significance of pelvic inflammation varies according to the resistance of the patient, to the location and nature of the structures involved and to the virulence of the causes which produce

it. Strong predisposing causes make the woman less able to resist morbid irritation, and inflammation once established is more likely to be severe and progressive. If infection is confined to superficial areas its gravity is relatively much less than when deeper structures are diseased. Endometritis, for example, is less serious than an inflammation involving the uterine wall or the parametric lymphatics and veins. Moreover the same infection is more serious in some places than in others. This may be illustrated by the case of a man who picked his teeth with a vaccine point and experienced the most distressing result. Some bacteria are harmless and some only mildly virulent. The gonococcus, for example, is more general and therefore more disabling than the staphylococcus. The streptococcus pyogenes are more dangerous than either.

The Relations of Circumuterine Inflammation to Metritis.

The significance of uterine inflammation is chiefly in its tendency to spread beyond the uterus and to involve the cellular tissue, the Fallopian tubes, the ovaries and the peritoneum. The swift and terrible march of traumatic puerperal and other infections to a destructive or even fatal result is largely explained by the close anatomical and physiological relations of the blood and lymph streams to the endometrium and peritoneum, especially those parts of the peritoneum which cover the uterus and Fallopian tubes.

Since the source of pelvic infection is usually endometritis, it follows that the routes by which it passes to the outlying structures must lead from the endometrium. Two such routes always lie open, one by continuity of surface, another by the lymph and blood vessels.

The route by continuity of surface is supported by the fact, first, that endosalpingitis is known to follow endometritis when there is no involvement of the lymphatics or veins in the parauterine connective tissue; second, that the same microbes are found in the inflamed mucosa of the uterus and tubes when there is no inflammation of the submucous connective tissue; third, that the tubal inflammation is sometimes limited to the uterine end of the tube and directly continuous with similar inflammation in the horn of the uterus.

Transmission by continuity of surface does not invariably involve all the epithelial surfaces over which the infection has passed. It is therefore possible, although not usual, for inflammation to

travel from the endometrium to the abdominal end of the tube without intervening infection of the uterine end. Moreover the uterine end may have been infected, but owing to its smoother surface and greater resistance may have recovered, leaving the disease only at the abdominal end.

The route by the lymph and blood vessels.—The lymph vessels run from the uterus outward into the cellular tissue between the folds of the broad ligaments and continue along the tubes and the ovarian ligaments to the inguinal, obturator and iliac lymph glands.* These vessels are in direct communication with the pelvic peritoneum, Fallopian tubes, ovaries and para-uterine cellular tissue. The lymphatic and veinous routes are evidenced, first, by the frequent presence of salpingitis in the abdominal end of the tube. If it had traveled from the uterus by continuity of surface the intervening mucosa would usually, though not necessarily, have been infected. Second, the para-uterine lymphatics and veins, together with the connective tissue around them, are often infected when the Faliopian tubes are normal.

The relative frequency of these two routes is unknown. The gonococcus, formerly thought to thrive only on epithelial surfaces, has been found in connective tissue and is known to be carried by the lymph route.† Its presence in the uterine muscles ‡ and in the endocardium § has also been demonstrated. The propagation of other infectious microbes in the blood and lymph vessels and their transmission through them has long been known. The investigation of Leopold shows the endometrium to be so abundantly supplied with lymphatic vessels that it has even been called a lymphatic gland. The lymph route is demonstrated from the bacterial and from the anatomical standpoints.

The lymph route is very apt to be the mere channel of infection, and may itself show no trace of inflammation, or may be inflamed throughout. The bacteria by whatever route carried will colonize only at points of least resistance. The resistance along the route may be sufficient to withstand their force. Even though the infection may have passed along the lymph and blood channels to the tube, peritoneum and ovaries without intervening abscess or even inflammatory effusion, this fact does not prove that the infection was carried by the mucous surfaces.

* Poirier : Le Progrès Médical, 1889.

† August Martin : Lehrbuch der Frauenkrankheiten, 1895.

‡ Centralblatt für Gynäkologie, 1895. § Leyden.

A third route of infection from extra pelvic organs is illustrated by the cases of Binkley * and Robb.† Binkley's case was purulent salpingitis following purulent appendicitis, a sequence frequently observed. Tubercular peritonitis ‡ often extends to the tube, ovary and uterus. Tubercular infection may rarely originate in the cervix uteri and reach the ovaries and tubes from that point.§ Usually it comes from the peritoneum.

It should be remembered that the presence of circumuterine inflammation is not proof of its uterine origin. The infection may originate in the intestines, the bladder, the perineum, or inflammation of the uterine appendages may be a sequel of the acute infectious diseases. Pelvic hematocele may become the seat of infection and be the predisposing cause of a pelvic abscess. Laceration of the perineum and other traumatisms of parturition and of surgery may also open the way for the entrance of infection through the blood and lymph channels. The causative relations between metrititic and perimetritic inflammation may then be reversed, *i.e.*, the infection may reach the uterus through the outlying structures instead of the outlying structures through the uterus.‖

Bacteriology.—The microbes of the infectious diseases have been quite generally found in the genitals. Among them are the gonococcus, the tubercule bacillus, the streptococci and staphylococci, the bacterium, coli communis, the pneumococcus,¶ the typhoid bacillus,** the microbe of diphtheria †† and the bacillus of malignant œdema.‡‡ At least two cases of actinomycosis have been reported.§§ One of the most frequent modes of introducing the bacteria is by uncleanly operations, "local treatments" and examinations.

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* Binkley : Cincinnati Lancet and Clinic, March 31, 1895.

† Robb : Johns Hopkins Hospital Bulletin, 1892, No. 20.

‡ Hegar : Genitaltuberculose der Weiber. Stuttgart, 1896.

§ Williams : Johns Hopkins Hospital Report, 1892.

‖ Bland Sutton : Surgical Diseases of the Ovaries and Fallopian Tubes, 1891.

¶ Frommel : Centralblatt für Gynäkologie, 1892, No. 11.

** Werth : Deutsche Medicinische Wochenschrift, 1893, No. 21.

†† *Ibid.*

‡‡ Witte : Zeitschrift für Geburtshülfe und Gynäkologie, 24.

§§ Zemann : Med. Jahrb. Wien, 1883. Centralblatt für Gynäkologie, 1884, page 560 Granger Stewart and Muir, Edinb. Hosp. Reports, 1, Monatschrift f. Geb. und Gyn., 1895, quoted by A Martin, Krankheiten der Eileiter, page 189.

PARAMETRITIS.

Pelvic Cellulitis, Perilymphangitis, Periphlebitis.

Exception has been taken to the name cellulitis, since all tissues are made of cells and since therefore in the wide sense all inflammation is cellulitis. The word is here used in accordance with the established usage and is limited to inflammation of the cellular tissue around the uterus and vagina, more especially that between the folds of the broad ligaments. The term parametritis is too restricted, since the disease may occur in the lower regions of the pelvis around the vagina and rectum. Cellulitis bears anatomically the same relation to peritonitis as pneumonia bears to pleuritis, *i.e.*, it is usually associated with a variable degree of peritonitis.

The lymph spaces have no walls save the cellular tissue around them. Inflammation of this tissue therefore must be cellulitis. When infection is traveling by way of the lymphatic vessels and veins which have walls and inflammation results, it will first be in the walls. An early attempt is made to check the spread of the disease by thrombosis. Destruction of the walls of the vessels may follow. The inflammation will then spread to the surrounding structures. This would be perilymphangitis or periphlebitis. The tissue around the vessels, however, is cellular or connective tissue. The disease in its full development is therefore cellulitis. To define cellulitis as perilymphangitis or periphlebitis might therefore be strictly accurate.

Formerly cellulitis was considered the central lesion in pelvic inflammation. Salpingitis, ovaritis and peritonitis were scarcely recognized as surgical diseases. A great advance was made in practical pelvic pathology when Batty, Hegar, Tait and others showed the vastly greater relative importance, from the surgical standpoint, at least, of tubal inflammation. When purulent accumulations in the pelvis were commonly attributed to cellulitis, when they were usually left to themselves or treated by incision and drainage into the vagina, the failures were many and unexplained. As soon however as they were generally recognized as accumulations of pus in the Fallopian tubes it was easy to understand why incision and drainage were so often followed by failure. It was because the tube was lined by mucous membrane and because chronic suppuration of mucous surfaces, even though drained, is most intractable. On the other hand a cellulitis abscess surround-

ed by cellular tissue when emptied naturally closes spontaneously. Pelvic cellulitis therefore unless complicated by tubal communication either terminates rapidly by resolution with complete recovery, or if suppuration occur it empties itself spontaneously or is emptied by incision and like a furuncle, which it resembles, promptly disappears ; hence the cellulitis abscess unless of tubal origin seldom becomes chronic and therefore has little or no part in the more frequent and more familiar chronic pelvic suppuration for which the uterine appendages and sometimes also the uterus have to be removed.

The clinical experience of the laparotomist shows pelvic suppuration to be almost always in the tube. It rarely shows a trace of pus in the cellular tissue below and if perchance an abscess be found there it usually gives evidence of having burst from the tube into the broad ligament.

The above facts have led to a tendency in late years, especially among laparotomists, to deny the existence of pelvic cellulitis and to announce the almost universal proposition, except in rare instances of puerperal origin, that all cases of extra-uterine inflammatory exudate are essentially of tubal development, that ovaritis and peritonitis are always secondary to tubal disease, and that an abscess in the broad ligament is only there when a previous infection of the Fallopian tube has forced its way through the mesosalpinx into the parametrium. In this connection note that the disease occurs in men, who have no Fallopian tubes. Why should the cellular tissue of the pelvis be free when the same tissue in every other part of the body is subject to inflammation ? Would it not be just as reasonable to assume that pleuritis is the central lesion in all pulmonary inflammation, or that perinephritis is the essential factor in all cases of contracted kidney ? The question however is not settled by *a priori* reasoning. Post-mortem studies prove the frequent existence of acute cellulitis abscess not only by rupture from the sactosalpinx but also by the direct lymphatic or venous route.

OBJECT OF INFLAMMATION.

Circumuterine inflammation involves diverse changes in the Fallopian tubes, ovaries, pelvic peritoneum, lymphatics, lymph spaces, veins and pelvic cellular tissue. Inflammation of the Fallopian tubes or ovaries may have the closest relation with inflammation of any or all of these structures. In this connection it is

essential to grasp not only the nature and anatomical results but as well the object of inflammatory process. The greatest danger is not from the inflammation but from the infection. Inflammation is an effort of nature to defend the general system against infection. If the infection has passed by continuity of surface into the tube it no sooner reaches the pelvic cavity than the peritoneum attempts to protect itself from further invasion by prompt closure with inflammatory adhesions of the abdominal opening of the tube. The uterine end may likewise be closed and the poison thereby shut off also from the endometrium.

If the infection has reached the pelvic cavity and produced peritonitis, unless the inflammatory process promptly confines the poison by thrombic plugging of the vessels, unless the lymph effusions are shut off with peritoneal adhesions and a protective wall is formed, the inflammation will speedily involve the whole peritoneum ; the infectious poison will be rapidly increased and poured in fatal quantities through the broad peritoneal surfaces into the general circulation.

We are familiar with the profound depression of the nervous system, the continued nausea, the anxious facies, the paretic and distended bowels, the tympanites which go to make up the symptom group of peritonitis. These grave symptoms are wrongly attributed to peritonitis ; they are rather the result of the profound ptomaine poisoning which the peritonitis is perhaps unsuccessfully striving to shut off from the general circulation.

When the infectious poison starts from the endometrium and goes forward by way of the lymph channels or veins in the cellular tissue of the broad ligaments, these vessels may simply transmit the poison to the peritoneum, tube or ovaries and themselves escape inflammation, or the course of the poison may be arrested by thrombic plugging of the vessels and by consequent extensive and destructive perilymphangitis or periphlebitis. The result may be an almost overwhelming pelvic cellulitis. The inflammation may be for the most part confined and the poison may spend its force within the limits of the cellular tissue of the broad ligament. These destructive processes may be so great as to end in the permanent impairment of the pelvic nutrition and in chronic invalidism, but the pelvic cellular tissue has taken the brunt of the poisonous attack, sacrificed itself and perchance saved the life of the woman.

A BASIS FOR THE DIAGNOSIS OF THE SO-CALLED INFLAMMATORY DISEASES OF THE UTERUS.*

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The first requisite for making a differential diagnosis of the pathological conditions is a knowledge of the nature of their essential characteristics. A great help to this is a proper nomenclature and classification. When different pathological conditions present similar symptoms it is often difficult to differentiate between them. So long as we know diseases only by their clinical or morphological symptoms, we have confused pictures of different things that overlap each other and cannot be distinctly separated. It is therefore desirable, as far as possible, to form our pictures of disease from their etiological elements. When this can be done, it is of practical value, because the treatment of a disease should be based upon its etiology. The chief object of my paper is to find a basis for differentiation in a classification of a group of diseased conditions which symptomatically have a confusing interrelation.

The definition and classification of the so-called inflammations of the uterus have undergone a marked change in the last twenty years, corresponding to the development of our knowledge regarding them, as well as to the change in the meaning of the term inflammation. At first we were obliged to be content with a diagnosis based on clinical symptoms, and we spoke of endometritis hæmorrhagica, endometritis catarrhalis or purulenta, endometritis dysmenorrhœica, etc. This classification is still made use of by Pozzi. Then the microscopical investigations of C. Ruge and others led to an attempt to build up a classification based upon anatomical or morphological symptoms, and we distinguished endometritis glandularis, endometritis interstitialis, endometritis glandularis ectatica, etc. The latter classification proved of little or no practical value, since the morphological changes do not correspond to the clinical symptoms and neither explain their causation nor give any indication for

* Read before the Chicago Gynæcological Society, as part of a symposium, November 20, 1896.

treatment. Doléris was one of the first to contend that genuine metritis is always of microbic origin, which he did ten years ago when the great importance of bacteria in pathological processes was not nearly so well known as to-day. In 1894 Van Tussenbroeck and Mendes de Leon distinguished between catarrhal endometritis of bacterial origin and pseudo-endometritis, a condition of hyperplasia or atrophy of the uterine mucous membrane. The first important attempt to form a comprehensive classification on an etiological basis was made by Prof. v. Winckel in his elaborate paper on the etiology and symptomatology of endometritis, read at the meeting of the German Gynæcological Society in Vienna in 1895. He divided the diseases of the endometrium into two groups. In the first he included those cases whose bacterial origin is not yet recognized, and in the second those known to be due to bacteria. His first group includes :

(*a*) Those cases due to circulatory disturbances arising from displacements, neoplasms, diseases of the heart, lungs, etc., or abnormalities in the blood composition.

(*b*) Those due to acute infectious diseases.

(*c*) Those due to intoxication.

(*d*) Those due to burns.

(*e*) Those due to retention of egg or decidual particles after labor or abortion.

(*f*) The isolated form of endometritis exfoliativa.

The bacterial group includes :

(*a*) Endometritis gonorrhoica.

(*b*) Endometritis tuberculosa.

(*c*) Endometritis septica puerperalis, due chiefly to streptococcus infection.

(*d*) Endometritis saphophytica.

(*e*) Endometritis syphilitica.

At the same meeting Wertheim read a paper on gonorrhœa of the uterus, in which he contended that the gonorrhœal infection is not confined to the endometrium as often as is generally supposed. Döderlein in Veit's " Handbook of Gynæcology" adopts substantially von Winckel's classification, but emphasizes the same point in regard to inflammation in general as that which Wertheim had upheld in regard to gonorrhœa ; namely, that the distinction between endometritis and metritis cannot be maintained. Schauta in his " Lehrbuch der Gesammenten Gynœkologie" in one chapter considers infectious diseases of the female genitalia under the sub-

divisions—wound infection, venereal infection (*a*) gonorrhœal and (*b*) syphilitic, and tubercular infection. In another chapter under pathological new growths he considers the hyperplasias and hypertrophies of the uterus. In the latest German work on Gynecology, the first quarter only of which has appeared, in the system of Northnagel written by Professors Chrobak and Rosthorn, the authors promise to consider diseases from the etiological standpoint so as to make the cause the unifying factor. The same principle was accepted by Kocher and Tavel in their recent interesting work on surgical infectious diseases. Winter, it is true, in his "Gynæcological Diagnosis," retains the term endometritis, and, abandoning any attempt to make a scientific classification, adopts for practical use the divisions endometritis catarrhalis, endometritis gonorrhoica, endometritis hæmorrhagica, endometritis dysmenorrhœica, endometritis exfoliativa, etc. This is an exception to the general tendency toward a uniformity of classification on an etiological basis.

That classification is best which best stimulates investigation. The most promising investigation in the realm of female diseases is that which seeks to discover the cause of disease. When once the causative agent and its life history are known we have some hope of successfully combating it. Until it is known the confusing clinical and morphological symptoms are liable to lead one astray.

The attempts of gynæcologists to find out the causes of uterine diseases and make this knowledge a basis of classification have been paralleled by the efforts of pathologists to secure a clear conception of the nature of inflammation. Formerly inflammation was generally considered a disease to be combated. We still speak of curing an inflammation. Indeed, our program for this evening calls for a paper on the treatment of inflammation of the uterus. Much recent work, however, tends to show that inflammation is essentially a healing or protective process, one that makes for the good of the organism. It is therefore something to be favored or perhaps to be created if possible when unfortunately lacking.

A difference of opinion arises when we attempt to agree upon what are its essential features. Many regard Metchnikoff's biological definition of inflammation as the only strictly logical and consistent one. He bases his idea of inflammation upon his study of comparative pathology, and defines it to be a phagocytic reaction on the part of the organism against irritants. This reaction is

carried out by the mobile phagocytes, sometimes alone, sometimes with the aid of the vascular phagocytes or of the nervous system. According to this definition, the vascular system plays a secondary role in the inflammatory process. There may be inflammation without a vascular system. The blood current simply supplies phagocytes in abundance where they are needed. There are only two essential factors, the etiological—the irritant; and the curative—the phagocyte. The irritant is generally of microbic origin.

Many object to this definition on the ground that it singles out one process, and that not the most important, to take the place of all the changes for which the name inflammation has so long stood. Yet there is a lack of agreement among the objectors to Metchinkoff's theory as to what are the most essential changes. While some ascribe more importance to the vascular changes, others lay greater stress on the disturbed nutritive processes. Under the circumstances it is not strange that Thoma discards entirely the term inflammation. He holds that it cannot legitimately be restricted to a simple process like phagocytosis, and that on the other hand its general use is so indefinite that it becomes synonymous with disease. Hence he would displace it by terms describing more exactly processes commonly grouped together.

Such a course would be analogous to that adopted in discarding the term phthisis. We formerly had fibroid phthisis, tubercular phthisis, etc. When it was found that these various pathological conditions had nothing essential in common, this grouping was given up for one resting on an etiological basis.

Whatever may be the fate of the general concept inflammation, I believe it to be in the interest of accuracy to discard it in the study of the diseases of the female genitalia, including at present especially the diseases of the uterus, and substitute others which better include the elements of the known pathological processes or diseased conditions. For that large and important group of so-called inflammations due to microbic invasion, we substitute the name infectious disease, which rightfully calls attention to the etiological factor. For the other large group which includes most of the cases to which the name chronic inflammation is generally applied, there are various etiological factors, but the morphological changes have a greater or less similarity characterized by an abnormality in the growth of a part or all of the tissue elements, and hence we make a grouping on the basis of the pathological or

anatomical structure, and we speak of hypertrophies and hyperplasias and atrophies and aplasias or hypoplasias.

This then is the classification that I would adopt in the diagnosis and study of that class of female diseases formerly designated inflammations. It will also prove of practical use in determining prognosis and the principles of treatment.

The more important infectious diseases are gonorrhœa, tuberculosis, the streptomycoses, the staphylomycoses and the saprophytic infections. Each of the infectious diseases has not only its distinct etiological factor but also a distinct pathological process and sufficiently characteristic morphological and clinical symptoms to merit a separate name and differentiation from its related diseases.

It is as a rule desirable to consider each of these diseases as an entity and not make separate diseases because different organs are affected. Difference of habitat makes a certain difference in the life history of the infecting agent, but there is always a great similarity in the mode of growth, whether it be in the vulva, the uterus or the Fallopian tubes, and for therapeutic purposes it is very important that we consider the disease in its entirety instead of confining our attention to its manifestation in a particular organ. Hence in general I would prefer to study infectious diseases as wholes instead of considering gonorrhœa of the uterus, streptococcus infection of the uterus, etc.

If however it be desirable to confine our attention to the uterus, we note, first, that it is impossible to make a very sharp distinction between infections of the cervix and those of the corpus. The idea that the cervix is much more frequently infected than the corpus of the uterus rests, first, upon the supposed fact that cervical catarrh is much more common than catarrh of the corpus, and secondly, upon the admitted protective power of the cervical mucous plug. In regard to the first point it may be said that contrary to the general opinion, Van Tussenbroeck and Mendes de Leon have found catarrh of the corpus more common than that of the cervix. Concerning the second point we may consider the sources of infection. Generally infection follows labor or abortion, dirty gynæcological treatments, or coitus, corresponding to infection post-partum or post-abortum, traumatic infection and venereal infection. In the first two cases the cavity of the corpus is directly infected by the examining fingers or by instruments. In venereal or gonorrhœal infection both Wertheim and Menge

have found that the mucous plug in the cervical canal does not protect the uterine cavity from penetration of the germs as much as was supposed. Only in tuberculosis, where the infection is almost always secondary, the corpus alone is generally affected. With this exception, for diagnostic purposes we may ignore a distinction between infection of the cervix and infection of the corpus.

It is often impossible to distinguish between an endometrial and a myometrial infection. The intimate hæmic and lymphatic vascular connection between the mucosa and the muscularis which results from the immediate transition from the former to the latter without the intervention of a submucosa allows a frequent deeper infection than occurs in the case of other mucous membranes. In severer grades of streptococcus infection the muscularis is penetrated by colonies of bacteria which often form abscesses. In staphylococcus infection the invasion of the deeper tissues, although not so rapid, is not infrequent. In tubercular infection the myometrium is very often involved. In case of gonorrhœal infection the old idea that the infection is confined to the mucous membrane is still vigorously supported by eminent investigators like Bumm, while Wertheim contends for the frequent involvement of the entire organ. Madlener and Menge have found gonococci in abscesses in the uterine wall, proving that the myometrial infection can occur. Future investigation must demonstrate how common is the deeper invasion. All these facts, however, show that the myometrium may be infected along with the endometrium in any case. Under favorable circumstances, when the virulence of the infecting agent is slight and the leucocytic reaction good, the bacteria may be confined to the outer layer of the mucous membrane by the circumscribing leucocytic wall. In case of a virulent infection or slight reaction the bacteria are liable to penetrate deeply. Clinically it is generally impossible to determine the extent of the invasion.

It now becomes necessary to introduce the term chronic infection and define its meaning. A chronic infection is simply the pathological condition that results from the continual presence of the infecting agent. The persistence of the infecting agent is due to the failure of the tissues to react sufficiently to expel the irritant. The essence of this reactive process consists in the destruction of the invading microbes by the leucocytes which are attracted to them through the positive chemotactic properties of the bacterial toxines. The neutralization of the toxines may go on hand in

hand with the destruction of the bacteria. When the leucocytosis is sufficient to destroy all the bacteria and their toxic products are eliminated the reactive process is complete. The products are removed through the circulation when the amount is small, or they may be in part cast off from the free surface of the mucous membrane in the form of a muco-purulent discharge. If for any cause the reaction is incomplete, more or less of the bacteria remain in the tissues. Sometimes they may exist in circumscribed abscesses, as is the case with the tubercle bacilli in the caseous tubercular abscesses. At other times they continue a true parasitic existence in and among the tissue cells. When they remain in the tissues for some days or weeks we have a chronic infection. In such cases their irritant action doubtless becomes modified in time as a result of the conditions under which they grow, but probably they always continue to cause some pathological changes by their presence.

The study of the pathological and anatomical changes resulting from both acute and chronic infections leads us to a consideration of the second group of uterine diseases, namely, the hyperplasias, hypertrophies and atrophies. Since a true hypertrophy is difficult to demonstrate, and since a hyperplasia—that is, a disproportionate growth of one tissue—is generally found, we will for brevity use the term hyperplasia to designate the whole group. A hyperplasia of certain elements generally implies a hypoplasia of other elements.

No sharp distinction can be made between hyperplasia and the reactive processes occurring in an infection. In the severer grades of infection the degenerative changes in the tissue cells which are due either to the pressure of the leucocytes and the exudation, to the bacterial poisons, or to over-stimulation in the immediate vicinity of the infective agent, at first predominate. In the slighter grades of infection and on the boundary of the infected zone in the severer grades there is cell proliferation. Fibroblasts and new connective tissue form from the proliferating cells of the connective tissue and possibly from the leucocytes. The gland cells are likewise stimulated to proliferation by the increased supply of nutrition furnished by the exudation and perhaps by the leucocytes. The extent of these proliferative changes depends not only on the duration of the exciting cause but also on the continuing influence of the secondary vascular changes.

Thus arises either a fibrous or a glandular hyperplasia as a re-

sult of infection. But infection is not the only cause of hyperplasia. It is often found not only where there is no evidence of the presence of bacteria, but also where the history of the case gives no reason to assume their presence. We cannot doubt that circulatory disturbances lead to nutritive changes which result in such hyperplasias. According to Adami's convenient classification the non-inflammatory causes of hyperplasia may be (*a*) increased arterial nutrition, (*b*) increased venous congestion, (*c*) lymphatic obstruction. These would explain the instances of endometritic hyperplasia found in cases of heart, lung or kidney disease, displacements of the uterus, etc. The hyperplasia endometritis ovarialis, the endometritis hyperplasirende or fungosa of Olshausen, according to the theory of Breunecke would be included among the hyperplasias due to increased arterial nutrition where the vascular stimulus came from the congested or diseased ovaries.

It is very interesting to inquire whether the hyperplasias of non-infective origin can be differentiated anatomically and clinically from those which result from the reactive processes which follow infection. The changes in the vessels which have been described as consisting at first in a swelling up of the endothelium, with the occurrence of more or less serous and corpuscular exudation and later in a hyaline degeneration of the vessel walls, are probably common to both. The changes in the glands are essentially the same in both. In the connective tissue the leucocytic or small-celled infiltration is usually held to be pathognomonic of the infective sequelæ. Clinically hæmorrhage or the presence of a muco or muco-sanguineous discharge may occur in hyperplasia from any cause, but a distinctly purulent discharge probably never occurs in hyperplasia of non-infective origin, and when not associated with a persisting infection is at least evidence of its previous existence.

Sänger has recently proposed the term "residual gonorrhœa" to apply to the pathological process which persists after disappearance of the gonococci. The term has the advantage of being in line with the etiological classification, and we might use the word residual infection, to designate the hyperplasias following infection. The use of the term infection where the infecting agent is no longer present is apt to be confusing, and hence it seems desirable to use the term infectious hyperplasia, or better, pathological change of infectious origin.

Hyperplasia of the cervix without involvement of the corpus

occurs more frequently than is the case with infections. The various forms, hyperplasia follicularis portionis, ectopium cervicis, etc., are too well known and too easily diagnosed to require further attention.

Hyperplasia endometrii and hyperplasia myometrii may also exist to a certain extent independently of each other, but an interstitial hyperplasia generally involves the connective tissue of the muscular wall to a certain extent. The various forms, hyperplasia interstitialis, hyperplasia glandularis, hyperplasia diffusa, present similar clinical symptoms, namely, hæmorrhage, catarrh, premenstrual pain, sometimes tenderness and enlargement of the uterus, so that it is generally impossible to differentiate them clinically. Hyperplasia fungosa, the endometritis fungosa of Olshausen, is characterized by excessive hæmorrhage. Hyperplasia exudativa or exfoliativa is the well-known membranous dysmenorrhœa.

It is not within the scope of this paper to make detailed differential diagnoses between the various uterine infections or the different hyperplasias or to separate each of them from other pathological conditions, like the tumors, which have similar symptoms. My purpose was rather to furnish a basis for diagnosis in a classification that is logical and practical. The ultimate test of the value of a classification must be its adaptation to the practical needs of clinical experience. To show the practicability of the classification proposed, I will in closing present the outline of a scheme of some of the more important diagnostic points.

Means of Diagnosis.

anamnesis.

History of traumatic, puerperal or venereal infection, or of general disease or local disturbance.

Clinical Symptoms.

General.

Due to toxinæmia, bacteriæmia. (Fever, etc.)

Due to reflex mechanism. (Nervous, digestive, etc)

Local.

Discharge (menstrual or intermenstrual).

Amount, duration, color, odor, character as mucous, purulent, bloody.

Pain.

From uterus, from adjacent organs.

Reproductive functions.
Sterility, abortions, labors.
Examination.
Inspection and palpation.
Discharge. Use of Schultze's tampon. Color, odor, consistency.
Uterus. Size of body and cervix. Tenderness. Cavity (examination by sound and finger).
Condition of neighboring organs.
Histological and bacteriological examination.
Collection of discharge from cervix and body.
Uterine scrapings.
Cultures.
Inoculations.

Infectious Diseases.

streptomycoses.

(Including erysipelas and so-called diphtheria.)

(*a*) Acute.
1. *Puerperal* (post-partum or post-abortum).
Most common puerperal infection.
History of internal examination or instrumentation.
General symptoms, violent, due to toxinæmia and bacteria, fever, etc.
Local symptoms—copious bloody-purulent discharge. Putrid odor due to contamination with saprophytes.
Pain from uterus, peritoneum.
Obstruction.
All bacteriological tests positive.
2. *Non-puerperal traumatic.*
History of use of sound, douche tube, etc.
Symptoms and examination as in puerperal streptomycoses.

(*b*) Chronic.
History of acute attack not often lacking.

staphylomycoses.

(Also includes cases of so-called diphtheritic ulceration.)

(*a*) Acute.
1. *Puerperal.*
Less common than streptomycoses infection.

General symptoms less violent than in former infection; bacteriæmia not so common.

Bacteriological examination conclusive.

2. *Non-puerperal traumatic.*

Most common.

May be secondary to other infections.

(*b*) Chronic.

Common.

Differentiated through bacteriological examination.

GONORRHŒA.

Uterus affected in about one-half of all cases of gonorrhœa.

Gonorrhœa occurs in ten to thirty per cent. of all women.

(*a*) Acute.

1. *Puerperal.*

Not rare. Due generally to urethral or vulvar infection during pregnancy.

General symptoms of intoxication are slight. Occasionally gonorrhœal arthritis.

Local symptoms—purulent lochia, pain from affection of tubes and peritoneum.

Inspection may show infected urethra or vulva.

Microscopic examination of stained slides. Differentiate by use of Gram.

2. *Non-puerperal traumatic.*

Not uncommon from gynæcological instruments, pessaries, etc.

Sequel of vulvo-vaginitis in young girls.

3. *Venereal.*

Chief infection.

(*b*) Chronic. (Includes so-called latent.)

One of the most common chronic infections of the uterus.

History of infection.

Frequent sterility on account of tubal affection.

Inspection may show infected Bartholin's glands.

Palpation shows thickened tubes, especially salpingitis isthmica nodosa of Chairi and Schauta.

Bacteriological examination may be assisted by artificial excitation of "latent" germs through use of irritant, intra-uterine applications or indulgence in improper diet.

TUBERCULOSES.

Two-thirds as often in the uterus as in the tubes.

(*a*) Primary.

Rare. Friedlander's and Meyer's cases in the cervix.

(*b*) Secondary.

Generally in the body. Follows tubal disease.
There may or may not be symptoms of general tubercular infection.
Discharge sometimes caseous.
Pain not important.
Sterility.
Uterus large. Tubes affected.
Microscopic examination of uterine scrapings.

SAPROPHYTIC INFECTION OR INTOXICATION.

Due to non-pathogenic bacteria and yeast fungi, and also at times pathogenic bacteria, streptococci, bacilli colli communes, etc., which live in the discharge and in dead tissue.

1. *Puerperal.*

Very common.
Symptoms of intoxication but not bacteriæmia.
Putrid discharge.
Uterus tender, sometimes tympanitic.
Bacterial findings not conclusive.
Results of intra-uterine irrigation diagnostic.

2. *Non-puerperal traumatic.*

Often secondary to infection.
Foul discharge.
Bacteriological examination.

HYPERPLASIAS AND HYPERTROPHIES.

Hyperplasia Cervicis.

Including as more or less separate forms,
Elongatio portionis.
Ectropium cervicis.
Hyperplasia cervicis follicularis (ovula Nabothii).
Erosio portionis.
Diagnosed by physical examination.

Hyperplasia endometritis.

Clinically not to be distinguished are :
Hyperplasia interstitialis.

Hyperplasia glandularis.
Hyperplasia interstitialis glandularis.
Hyperplasia glandularis interstitialis.
Hyperplasia diffusa.
Hyperplasia polyposa (mucous polyp).

History shows absence of infection. General symptoms are due rather to the reflex mechanism and in hæmorrhagic cases to anæmia than to intoxication or to bacteriæmia.

Local symptoms.

Increased menstrual hæmorrhagic discharges, often catarrh.
Frequent sterility and abortion.
Uterus generally enlarged, often tender.
Endometrium bleeds freely on introducing sound, often soft feel.
Bacteriological examination negative.
Microscopical examination of scrapings diagnostic.

Hyperplasia exudativa.

(Membranous dysmenorrhœa.)

Casting off of membrane diagnostic.

TUMORS.

Chorio-carcinoma. Syncytioma malignum.

(Deciduoma malignum. Sarcoma deciduocellulare.)

History.

The chief symptom, persisting hæmorrhage, begins within a few weeks after labor or abortion, or especially after the birth of a hydatid mole.

General symptoms arise from the presence of metastases in the lungs and other organs.

Local examination shows frequent infective metastases in the vagina.

Uterus is enlarged. In its cavity is found a spongy mass more brittle than in fungus hyperplasia.

In the parametrium may also be metastases.

Microscopic examination shows the characteristic large cells or syncytial masses penetrating the tissues.

Carcinoma.

The various forms of polypoid, infiltrating, ulcerating, diffuse and circumscribed cancers of the vaginal portion, the cervix and the body are distinguished from the non-malignant hyperplasias chiefly by means of microscopic examination.

The hereditary history has significance.

Bloody discharges, especially those occurring post coitum, important.

Pain especially significant in corporeal cancers.

Sarcoma.

Generally arises in the mucous membrane of the body or in a myoma.

Most important symptoms are irregular hæmorrhages.

Microscopic examination diagnostic.

Myoma.

Most important from a diagnostic standpoint are the submucous myomes.

Distinguished from hyperplasia polyposa by examination of uterine cavity with finger, and by microscope.

426 Center Street.

THE PROGNOSIS OF INFLAMMATORY CONDITIONS OF THE UTERUS, ENDOMETRITIS AND METRITIS.*

By J. T. Binkley, Jr., M.D., Chicago.

I have often thought that the prognosis of endometritis deserves more consideration than is usually given it in the textbooks on gynæcology. In all chapters upon this subject, either no mention at all is made of the prognosis, or it is so lightly touched upon, that it is described in a very few lines. The prognosis is of great, and possibly vital importance to the patient, and should be clearly made.

The prognosis of an inflammatory condition of the uterus will, of course, depend upon the cause and character of the inflammation and upon the conditions of the organ and surrounding structures.

The prognosis of endometritis *per se* is not always so grave or serious, but unfortunately the sequelæ are what we have to contend with and take into consideration when a prognosis is made. The usual tendency of all inflammatory conditions is extension and invasion of the surrounding structures and organs. Most espe-

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* Read before the Chicago Gynæcological Society, November 20, 1896, as part of a symposium on metritis.

cially is this so in inflammation of the uterus, because of the abundant lymphatic supply. In fact, the interior of the uterus may be likened to one large absorbing gland.

In addition to this, the Fallopian tubes are also direct channels for the further transmission of infection.

With this reference to the possible, and in fact very probable sequelæ of intra-uterine inflammation, we pass on to the conditions of the organ which may be favorable or unfavorable to the prognosis.

Given a case of endometritis in a woman of good general health, with a well-developed uterus, normal in position, and with a fairly open cervical canal, the prognosis, with properly directed treatment, would be most favorable.

Given a case with opposite physical conditions, the patient anæmic, the pelvic organs imperfectly developed or so displaced that the cervical canal is rendered indirect, and partly occluded, however careful the treatment may be, the prognosis is unfavorable.

In the cases of mechanical injury, resulting from labor, such as lacerations of the perinæum or cervix with attendant sub-involution, properly directed treatment, if not too long delayed, will usually effect a cure.

One other factor which largely influences endometritis is that of constricted cervical canal. The prognosis of endometritis above such canal, could be considered favorable under proper treatment.

Passing from the conditions, I wish to touch lightly upon the character of infections which influence the prognosis in these cases.

The prognosis of a gonorrhœal endometritis, for instance, is always unfavorable. It is next to impossible to check the invasion of these germs. Therefore the prognosis is most unfavorable. No doubt all forms of intra-uterine infection are transmitted indirectly through the lymphatic circulation, and directly through the tube. Which of these channels is the most usual, is a question, in the majority of instances. However, it is pretty well demonstrated in the gonorrhœal variety of infection, that the germ is transmitted through the Fallopian tube. As a proof of this, we find the left side most frequently infected, as the left tube is the larger.

After reviewing the above, we are led to conclude, first, that the disease *per se* is not dangerous to life if uncomplicated, and if uncomplicated will usually yield to treatment.

Second, that some of the most obstinate cases frequently recover after the menopause.

Third, that endometritis undoubtedly predisposes to malignant degeneration, notwithstanding the firm denial of such a possibility by many authors.

Fourth, that if left to its own tendencies, endometritis will almost surely involve the deeper structures, producing metritis, going further and attacking the peri-uterine covering, and further, deposits will be made in the cellular tissue, attacking the ovary and extremity of the tube by this lymphatic extension, or there will be direct deposit of the germs in the lumen of the tube, or on to the peritoneum, through the tubal canal.

So our prognosis of neglected cases will be a cellulitis salpingitis, ovaritis, peritonitis, with the formation of abscesses in the pelvic cavity, great destruction of tissues and organs, and frequently loss of life.

103 State Street.

TREATMENT OF ENDOMETRITIS.*

By T. J. Watkins, M.D.,

Clinical Instructor in Gynæcology, Northwestern University Medical School; Gynæcologist to St. Luke's, Wesley and Provident Hospitals, Chicago.

The treatment of endometritis due to malignant disease, syphilis, tuberculosis and the like, need not be considered. The treatment of cervical and corporeal endometritis will not be considered separately, because they are usually associated, and because, when endoservicitis exists alone, it is usually consequent upon laceration.

For convenience, endometritis will be classified as acute septic, acute gonorrhœal, chronic catarrhal, chronic septic and chronic gonorrhœal. The gonorrhœal variety is septic, but as it is known to be due to a specific cause, it is advisable to treat of it separately.

1. *Acute Septic Endometritis.*—This variety is usually the result of infection introduced at the time of abortion or labor, or by the sound or some other instrument in the exploration or treatment of

* Read before the Chicago Gynæcological Society, November 20, 1896, as part of a symposium.

the uterine cavity. When it is of puerperal origin, the cavity of the uterus should be thoroughly explored under strict aseptic precautions. When necessary, an anæsthetic should be given and thorough dilatation made. The uterus should then be thoroughly irrigated with an antiseptic solution. I believe that it is very important to get rid of as much of the septic material retained in the uterine cavity, as possible by the use of an antiseptic irrigation, before any abrasions are produced. The intra-uterine douche should always be given under low pressure, and a point which has a large space for the return current should invariably be used.

If any remnants of placental tissue or membranes be found they should be thoroughly removed, preferably with the finger, but the placenta forceps or dull curette may be employed. The objection to the use of the sharp curette in these cases is quite general, because with it, more or less comparatively healthy mucous membrane will of necessity be removed. This membrane, when intact, guards against infection, and the wound which is left after its removal gives the infection direct access to the blood vessels and lymphatics of the uterus. The cavity of the uterus should again be irrigated with an antiseptic solution, and if the uterus does not seem to be in condition to afford free drainage, the gauze drain should be inserted. If a distinct suppurating cavity is present, the use of a tubular drain may be advisable. In a case under my care, in which a distinct suppurating cavity existed in one of the horns of the uterus, gauze drains proved inefficient. Tubular drainage would probably have hastened the recovery in this case. If there is suppuration or necrotic tissue in the uterine cavity, daily intra-uterine irrigation or packing will be necessary as long as the condition persists; otherwise, vaginal douches may be sufficient.

When infection occurs from the introduction of instruments into the uterine cavity, vaginal douches and constitutional treatment may be all that is required. If necessary, the uterus may be irrigated and drained. If the cervix has been sutured, the sutures should be removed, the wound left open and cauterized.

2. *Acute Gonorrhœal Endometritis.*—Before considering this variety of endometritis, I will submit the following questions:

(1) In what proportion of cases of gonorrhœa in the female does the infection extend into the uterus?

(2) How can this extension be prevented?

A. Martin is of the opinion that gonorrhœa extends into the

uterus in a minority of cases. Most of the authorities whom I have had occasion to consult do not consider this question.

In the majority of cases of acute gonorrhœa which I have treated, recovery has taken place without infection of the endometrium. I am of the opinion that gonorrhœa will seldom extend from the vagina into the healthy uterus during the inter-menstrual period, providing that ordinary cleanliness be observed. During health, bacteriological investigation has shown that the cervix with its canal filled with leucocytes guards the cavity of the uterus against invasion of the bacteria which normally exist in the vagina. When uterine leucorrhœa exists and during menstruation, this protection to the uterine cavity is removed. Gonococci thrive better in blood serum than in any other known culture medium. I believe, therefore, that when gonorrhœal vaginitis exists, vaginal douches of the temperature of the blood should be used during menstruation, and that in cases of gonorrhœa, the cavity of the healthy uterus should not be invaded by the sound, dilator, curette or irrigator.

If gonorrhœa occurs in a patient subject to uterine leucorrhœa, specific infection of the endometrium is almost certain to occur. The necessity of active treatment of vulvar and vaginal gonorrhœa as prophylaxis against specific endometritis is obvious.

Pozzi believes that the treatment should principally consist of the frequent use of slightly caustic and intra-uterine irrigations.

Polk advises treating the disease on the principles advocated in the treatment of gonorrhœa in the male. The cervix is dilated in narcosis, the uterus irrigated with about one quart of a one to three thousand solution of bichloride of mercury, and the uterus packed with sterile gauze. He has used the curette in four cases, but in all these, salpingitis resulted, which caused him to discontinue its use. He objects to the use of caustics for the same reason.

"The American Text-Book of Gynæcology" advises irrigation of the uterus and dressing with gauze. If peritonitis or salpingitis occur, it states that curettage is necessary.

Reamy advises the use of the sharp curette.

I believe that in cases where the amount of discharge is slight, intra-uterine treatment is not advisable, because of the danger of producing a mixed infection which increases the risk of the occurrence of salpingitis and peritonitis, as it is probably a demonstrated fact that gonorrhœal inflammation has but little, if any, tendency to cause suppuration.

3. *Chronic Catarrhal Endometritis.*—It may be said that this term

is a misnomer ; that inflammation cannot occur without the presence of bacteria ; and that, as Boulanger says, " All or nearly all cases of endometritis are caused by a microbe." We are, however, forced to use this nomenclature, since at present there is no other name to take its place. Pozzi suggests that it be considered a clinical and not a pathological term.

The treatment will vary in accordance with the cause, whether constitutional, symptomatic of some pelvic disease, or local. Some of the constitutional disturbances which may require treatment are : anæmia, faulty elimination such as renal insufficiency as Dr. Etheridge has described, constipation, and conditions which tend to keep the pelvic organs congested, such as improper dress, occupations which require much standing, and affections which cause a sluggish circulation.

Any pelvic diseases which interfere with uterine circulation, such as uterine displacement, pelvic inflammation outside the uterus, and pelvic neoplasms will require appropriate treatment. In all cases of catarrhal endometritis these conditions should be sought for, and, if found, should be treated before remedies are applied directly to the endometrium. This is especially true when this symptom affects the unmarried woman.

By local treatment is meant the direct application of remedies to the endometrium. Schultze advises dilatation of the cervix with laminaria tents, and frequent copious intra-uterine irrigation of one to fifty carbolic acid solution.

Pozzi thinks this kind of treatment suitable for mild but not for severe cases.

The " American Text-Book of Gynæcology" objects to the use of caustics because sloughs occur, and thus the endometrium becomes suppurative, and peritonitis and salpingitis may result.

Reamy believes that when constitutional remedies fail to effect a cure, the curette should be used.

Skutsch advises the daily use of irrigations of a three per cent. solution of bicarbonate of soda to dissolve the mucus, followed by irrigations with carbolic acid, bichloride of mercury or lysol, but believes that washing out of the secretion is the more important part of the treatment.

Von Winckel recommends for mild cases irrigation with the soda solution, followed by applications of liquor of sesqui-chloride of iron. In the obstinate cases he advocates free dilatation, curet-

tage without irrigation, dry mopping of the uterus with cotton, and application of the iron solution.

Skene employs, usually without dilating, a few drops of mild antiseptic and astringent solution injected with a pipette, and objects to irrigation, injection, mopping and the use of tents. Where hypertrophy of the mucous membrane exists, he employs the curette.

Thomas depends on constitutional remedies, applies no medicines above the internal os, and recommends the use of the dull wire curette to remove fungous growths.

Mundé dilates, uses the dull curette and cauterizes with chloride of zinc. He objects to injection and irrigation because he considers them dangerous, and depends on applications with swabs.

This diversity of opinions and methods of treatment of authorities seems to indicate that the so-called office treatment of catarrhal endometritis is not especially effective.

My experience with injections, irrigations and swabs in the treatment of catarrhal endometritis has been limited ; I have not used them systematically, and the results have been unsatisfactory. When glandular hypertrophy exists, the use of thorough curettage, irrigation and drainage is the quickest, safest and most effective means of treatment.

4. *Chronic Septic Endometritis.*—The prophylactic treatment of chronic septic endometritis has not received the attention in the literature which its importance deserves. Many cases of this affection result from puerperal infection and can probably be prevented by appropriate treatment. In treating puerperal cases, the advisability of intra-uterine treatment should be considered, not only as regards the saving of life, but also as regards the remote health of the patient. As many cases of puerperal endometritis will result in chronic septic endometritis if appropriate intra-uterine treatment is not employed, these cases should invariably be submitted to thorough exploration of the uterine cavity for remnants of decidual or placental tissue and treated according to indications.

If it were possible to stop the careless and useless employment of the uterine sound, as frequently practised, the number of cases of chronic septic endometritis would be greatly diminished.

The pathological anatomy of chronic septic endometritis is such as to make it obvious that treatment by injections, irrigations, and swabs can be of little or no service, and, therefore, these methods of treatment need not be considered.

The enthusiastic advocates of electro-therapeutics seem to believe that nearly all cases can be cured by this means, but others, after a thorough trial, have abandoned the use of this remedy.

The "American Text-Book of Gynæcology" states that currents too weak to destroy bacteria cause death of tissue, inhibit the action of leucocytes and cell-proliferation and thus deprive nature of its power of combating disease and of repairing lesions.

Fehling, Ahfeld, Schwartz, Jackson, Outerbridge, and Newman have advocated the use of glass, hard rubber or metal intra-uterine drains. These appliances do not give sufficient space to permit free escape of the muco-purulent discharge. Pozzi believes that foreign bodies, aside from gauze in the uterus, tend to aggravate the inflammation.

The rational treatment of chronic septic endometritis, based upon the pathology, is to remove the suppurating mucous membrane as completely as is consistent, to render the uterine cavity as aseptic as possible, and if necessary, to establish drainage. The depth of the utricular glands is so great and their calibre is so small that it is imperative to remove them before cure can be effected. To use caustics of sufficient strength to destroy the hypertrophied tissue and to kill the bacteria, is probably certain to prevent perfect regeneration of the endometrium.

The belief is almost universal that the curette is the best agent for the removal of the suppurating membrane in chronic septic endometritis. Observations have been made which show that the endometrium is perfectly regenerated after curettage, and that the time necessary for the accomplishment of this regeneration is about two months.

A. Martin believes that curettage can be more thoroughly done with the blunt than with the sharp instrument. Thomas prefers the blunt wire curette. In the hands of an experienced operator, the general opinion is in favor of the sharp wire or spoon curette, notwithstanding the opinions of Thomas and Martin. The dull curette is the safer instrument for the inexperienced operator.

Curettage can be thoroughly done only with free dilatation and under narcosis. The technique of curettage has been so frequently and so well described that it is not necessary to give it in detail. I desire, however, to emphasize the necessity of using a cervical speculum in order to thoroughly pack the uterine cavity, and not simply plug the cervical canal.

After curetting, a mild caustic or active antiseptic should be

used, because it is impossible to remove all the mucous membrane with the curette. Any one who believes that this is possible would be convinced of his error if he would curette a uterus, and then remove the uterus and examine its cavity.

After curettage, Dr. Henrotin advises the use of peroxide of hydrogen. This would seem to be an effective remedy. Carbolic acid, tincture of iodine and bichloride of mercury are also valuable remedies for the eradication of the disease in portions of membrane not removed by the curette, and for the disinfection of the uterine cavity. Bichloride of mercury may also be employed for irrigation as has been frequently recommended. Iodoform or other antiseptic gauze packing may be used on account of its medicinal action on the walls of the uterine cavity. A gauze drain will probably never do harm and may do much good. If, however, the cervix was patulous prior to the dilatation, and if the position of the uterus favors drainage, it may be dispensed with.

How long should the gauze packing be allowed to remain? This should depend upon the condition of the surface of the cavity. If it be perfectly aseptic when the gauze is inserted, as it probably never is, the packing may be left one week or more as has been recommended. Otherwise, if it is left more than two or three days, secretions which form on the surface of the gauze may decompose and reinfect the uterus. I am, therefore, of the opinion that gauze should never be left in the uterus more than two or three days without renewal.

The after-treatment of curettage probably does not receive, as a rule, the attention which is its due. If the uterus does not act as an automatic drain, the gauze packing should be continued as long as the discharge persists, and should be renewed often enough to prevent decomposition. If there is a discharge of pus, antiseptic intra-uterine irrigation should be continued daily until the discharge ceases. If a muco-purulent discharge recurs to any extent, a second curettage is probably imperative in order to effect a cure.

5. *Chronic Gonorrhœal Endometritis.*—The prophylactic treatment was considered under the head of acute gonorrhœal endometritis and so needs no further mention. The infection is usually mixed and is, therefore, to be treated according to the principles laid down in the treatment of chronic septic endometritis.

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Bibliography.

Polk : Trans. American Gynæcological Society, vol. xiii, p. 282.
Polk : Clinical Gynæcology, p. 293.
Newman : Journal of the American Med. Association, 1896.
Outerbridge : Medical Record, 1889.
Fritsch : Central. für Gyn., 1887, No. 30.
American Text-Book of Gynæcology, p. 207.
A. Martin : Diseases of Women, p. 194.
Pozzi : Med. & Surg. Gynæcology, vol. i, p. 275.
Von Winckel, Münch. Med. Woch., 1894, No. 31.
Skutsch : Trans. German Gyn. Society, 1891.
F. Henrotin : American Journal of Obstetrics, 1896.
J. T. Johnson : American Journal of Obstetrics, 1895, p. 734.
Boulanger : Gaz. de Gynécol., 1893.
Etheridge : Trans. American Gyn. Soc., p. 185.
Reamy : Amer. Journ. Obst., 1896, p. 274.
Schultze : Archiv für Gynäk., B. xx, p. 275.
Skene : Diseases of Women, p. 208.
Thomas : Diseases of Women, by Thomas and Mundé, p. 301.
Mundé : Diseases of Women, by Thomas and Mundé, p. 301.

SOME OBSTETRIC COMPLICATIONS, WITH REPORT OF CASES.*

By R. R. Kime, M.D., Atlanta, Ga.

Case I.—Abortion from Uterus Septus.

Case II.—Labor Complicated by Typhoid fever and Uterine Hæmorrhage.

Case III.—Placenta Prævia with Infection before Delivery.

Case IV.—Labor with Tumor and Infection.

Case V.—Septic Intoxication, High Temperature, Metastatic Glandular Inflammation.

Case I.—Mrs. L., age thirty-eight, married eighteen years, had three children, youngest twelve years old, no miscarriages.

When called I found the patient in bed ; the last flow one month previous was very free, lasting three weeks.

No nausea, no change in breasts, anorexia, pulse 100, tempera-

* Read before the Tri-State Medical Association (Georgia, Alabama, and Tennessee), Annual Meeting, October 12, 1896.

ture 102° F., which gradually returned to normal in six or seven days. Examination revealed the uterus to be prolapsed and retroverted, enlarged cervix, softened and discolored.

The uterus felt as if the left and posterior wall were thickened or a small tumor present, no evidences of pelvic inflammation.

The uterus replaced and supported by wool boro-glyceride tampons with constitutional treatment relieved the patient, so that she was soon out of bed.

A probable diagnosis of pregnancy was made, and advice given accordingly. About five weeks later the patient miscarried, the fœtal structures passing off, leaving the decidual structures behind. Examination revealed a septum at the internal os dividing the uterus antero-posteriorly. Removed the contents of the right side with a curette forceps and curette, disinfecting the cavity, which measured three and a half inches in depth. The left side was non gravid and measured one and three fourth inches in depth.

A strip of iodoform gauze, the uterine end moistened with camphorated phenol, was carried up into the uterus and left two days. The patient made an uninterrupted recovery.

Case II.—Mrs. E., age twenty years, primipara, labor normal at full term with pulse 90 to 95, temperature 100° F. I was not called until the beginning of labor as there was no special indication of disease so far as they had recognized. Temperature and pulse gradually increased each day with some tenderness of bowels. Lochia about natural except a little free.

By the eighth day the temperature had reached nearly 103° F. The bloody discharge increased, there were chilly sensations, the bowels became more distended, tender and tympanitic. I tried to wash out and disinfect the uterus. Did not use any curette ; but the hæmorrhage was so profuse that I had to tampon the uterus with iodoform gauze to prevent the patient from bleeding to death.

The next day the patient had two chills, her temperature reaching nearly 105° F. I removed the gauze, irrigated the uterus with a *very hot* solution of boric acid and alum, but had to replace the gauze at once to check the uterine hæmorrhage. The gauze was changed and uterus irrigated every one to two or three days, being governed by the pulse, temperature and constitutional disturbance. In changing the gauze the first three or four times the patient at one time became almost pulseless from loss of blood. Frequently a stream as large as a lead pencil would issue from the cervix. It

seemed as if the whole endometrium was bleeding. At no time did we find any placental tissue or membranes retained in the uterus.

The uterus at first was somewhat relaxed and larger than normal. *Hot solutions* of iodine, alum, etc., failed to contract it or to check the hæmorrhage.

The tampons were kept up for a period of three weeks before it was safe to discontinue them.

The diet was restricted as in typhoid-fever. Tonics and alimentary disinfectants were administered combined with digestive agents.

This was one of the cases in which a tampon was necessary to save the life of the patient, constituting an exception to my rule to drain all cases of infection after labor.

However, this case was not one of true septic or putrid infection in the ordinary acceptation of these terms, but one of typhoid infection producing a hæmorrhagic condition of the endometrium.

I was called to a neighboring town to see

Case III.—Mrs. B., aged thirty-two years, married three years, had one miscarriage at three months. I found her in labor seven and one half months of pregnancy, having had hæmorrhage for last four or five days previous to the date of visit. The pulse was 140, temperature 100° F., bowels tightly distended, tympanitic and constipated, tongue furred and red on the edges, headache with evidences of infection before delivery. She had three previous hæmorrhages about one month apart. At this time she was very weak from loss of blood.

Vertex presentation, os about two inches in diameter and dilatable, placenta torn with almost central implantation, uterus firmly contracted, the liquor amni having escaped some time previously. With great difficulty the hand was carried through the os and the torn portion of the placenta up into the uterus. The foot was grasped and brought down, but I was unable to turn until the foot was carried back up into the uterus, the leg flexed at the knee with two fingers in the popliteal space, the thumb keeping the leg flexed ; sufficient power was exerted to perform version, bringing the knee down as the hand receded from the uterus.

The placenta being attached low down and torn, had to be removed in pieces. The uterus was thoroughly irrigated with *hot* disinfectant solutions, antiseptic vulval pad and dressings applied, and all completed within one hour and thirty minutes after my arrival.

Strychnine and digitaline were used hypodermically to sustain the patient, small doses of calomel triturate and salines to move the bowels, quinine and salol were given to counteract infection and disinfect the bowels. Beef peptonoids and a liquid diet were ordered.

I visited her again two days after delivery; her temperature was 102⅗° F., pulse 130 to 140 and very weak, bowels distended, tympanitic and tender. She was suffering severe pain notwithstanding the physician in charge had used morphine hypodermically for the pain, and coal tar derivatives for the fever.

I at once administered salines, washed out, disinfected and drained the uterus, using a soft rubber tube in the uterus. In six hours the patient was comparatively easy; no more opiates or coal tar derivatives were used.

Large doses of quinine combined with salol were given, also strychnine combined with listerine and pepsin. The uterus was kept drained, disinfected and irrigated twice in twenty-four hours.

I visited the patient for five consecutive evenings, staying overnight each time until the temperature had reached normal, drainage being discontinued at the end of six days. The patient recovered.

Case IV.—Mrs. N., aged twenty-eight, married one year. During the first pregnancy she had a hæmorrhage with threatened miscarriage at about the third month and at times during the remainder of pregnancy. She was confined to bed most of the time for the last four months. She was weak and anæmic, the pulse 112, intermitting one beat in every three or four, temperature 102° F., with indications of commencing labor. The liquor amnii had been escaping for four days. Examination revealed the cervix to be two inches long, soft and about the size of three fingers, pushed up anteriorly under the symphisis pubis. Posteriorly, in Douglas's pouch, the hollow of the sacrum reaching up over the promontory, was a semi-solid mass, seemingly attached to, or in, the posterior wall of the uterus. In front of the mass bulging above the pubes was a solid round body diagnosed as a child's head, and the mass, as a tumor in the posterior uterine wall with the placenta over it. I endeavored to carry the mass up over the promontory and out of the pelvis but failed, the os being very small, *i.e.*, no dilatation. I gave morphine hypodermically, checking labor for ten or twelve hours. Being called at three A.M. on account of severe labor pains, I placed the patient in Sims's

position, hips elevated, and after considerable manipulation and pressure was able to carry the tumor up out of the pelvis and bring the child's head down. The neck of the uterus was soon obliterated by contractions, but the os remained *very small* and rigid. The patient being weak, anæmic, having used morphine and been in labor for several hours, I decided to use a *hot* vaginal douche which was continued about one hour. The cervix soon dilated and labor was rapidly completed under the influence of chloroform.

The placenta was retained. I tried expression by Credé's method, later, to buttonhole the placenta by slight traction on the cord ; this failing, and it being one hour and fifteen minutes after the birth of the child, I carried my hand up into the uterus forward over the tumor, then backward, and found the placenta attached by its upper third in the depression, the lower two thirds having separated from over the corresponding part of the tumor. The attached portion of placenta was firmly adherent, difficult to separate, the uterine wall soft and bleeding freely. After removing the placenta I used a very *hot* disinfectant intra-uterine irrigation and dressed the patient antiseptically. After labor the pulse was 116 and the temperature 101° F. The patient did fairly well for two or three days, then the pulse and temperature began to run up with evidences of absorption of infectious material.

I irrigated and disinfected the uterus, putting in a drainage tube. I irrigated the uterus twice each day, and kept up drainage about two weeks, when patient was practically convalescent, the tumor having reduced considerably in size. Good food and the usual constitutional treatment was given. I examined the patient one year after and the tumor had disappeared.

From the history of the case I am inclined to believe the patient had a fibroid tumor in the posterior uterine wall, rendered more vascular by pregnancy and the close attachment of the placenta, which participated in the involution of the uterus and disappeared by absorption.

Case V.—Mrs. W., aged thirty-nine years, married ten years, fourth confinement, no miscarriages, at previous labors made slow recoveries with increased lochia. I called ten days after labor and found the patient profoundly septic, the uterus retroverted, large (six inches deep), flabby, os patulous, uterus filled with purulent discharge which filled the speculum and vagina and ran down into the bucket by the side of the bed when the os was held open by

the dilators. Inflammatory deposits around uterus prevented mapping out of the tubes and ovaries. The uterus was irrigated, disinfected and drained. The pulse was 140 to 150, temperature 106.5° F.; strychnine and digitaline were given hypodermically at once.

Salines and large doses of quinine were administered, followed by strychnine combined with disinfectants and digestants. A liquid and nourishing diet was given.

The uterus was irrigated twice a day with mild disinfectants for awhile, then once a day ; drainage tube cleansed and reinserted each time. This plan of treatment was kept up until the pulse and temperature were normal, then the drainage tube was removed, vaginal douches used, and other treatment continued. Within forty-eight hours the temperature had reached 104° F., pulse 120 to 130.

The drainage tube was reinserted in four or five days. Temperature and pulse again became normal, the tube was removed and a strip of gauze (*not a tampon*) was introduced. The pulse and temperature again ran up, the tube was again used and kept in until the temperature and pulse remained normal several days, cleansing the tube and uterus every second day the last week or ten days of its use.

The patient made a complete recovery so far as the infection and absorption of exudate were concerned. This case also had metastatic glandular inflammation, especially at the angle of the jaw, without suppuration, but it interfered with the movement of the jaws for several months afterward.

General Remarks.

Case I. simply illustrates an arrest of development, leaving an unicervical septus uterus which during pregnancy frequently simulates a pregnant uterus with a tumor, in the uterine wall or an ectopic gestation, and in some cases may lead to an error in diagnosis.

Case II. represents typhoid fever commencing at the termination of pregnancy and developing a train of symptoms very similar to those frequently observed in cases of infection.

The hæmorrhage in this case was most probably due to the presence of typhoid germs or typho-toxine in the endometrium, as their presence has been demonstrated in the fœtus and placenta.

The patient would certainly have died of hæmorrhage if the uterus had not been tamponed.

This was a proper and positive indication for use of the tampon, not for drainage, but to prevent drainage, *i.e.*, obstruct hæmorrhage as the typhoid germs or toxines are not essentially eliminated by the endometrium as in cases of putrid or septic infection.

Case III. illustrates a class of cases in which decisive and prompt action is demanded for the best interest of the patient.

It also demonstrates the utility of tubal drainage from the uterine cavity and elimination from alimentary canal by use of salines in preference to the use of opiates and coal tar preparations to relieve pain and reduce temperature; the former remove the cause, the latter do not, and even in many cases hasten the fatal issue. Another point worthy of note is that this patient escaped phlebitis (phlegmasia alba dolens) which so commonly follows cases of placenta prævia on account of the loss of blood, rendering the patient more liable to infection.

We feel that drainage and elimination from the uterus and alimentary canal are the best means at our command to prevent phlebitis and the most rational treatment of puerperal infection as demonstrated in the last three cases reported.

Gauze tampons do not drain the uterus, and in septic cases where the curette is used are dangerous, and in many cases have hastened the fatal issue. Ideal efficient drainage from the uterus *can only* be attained by the use of a drainage tube with a strip of gauze carried up by the side of the tube; both are best introduced in the grasp of dressing forceps at the same time so as to disturb the endometrium as little as possible. The strip of gauze, *not a tampon*, simply adds capillary drainage to the tubular. This will drain any uterus in any position by changing the patient from side to side in bed.

Irrigating the uterus with *strong* disinfectant solutions after the first time or two of their use is injurious and interferes with nature's repair of the endometrium and with her method of elimination. The irrigations should be of very weak solutions of carbolic acid, boric acid or simply plain water, so as not to act as an irritant or destroyer of epithelial tissue.

A CASE OF BLADDER TUBERCULOSIS SUCCESSFULLY TREATED BY KELLY'S METHOD OF DIRECT MEDICATION.*

By John Osborn Polak, M.D., Brooklyn.

While tuberculosis of the bladder is regarded as a very rare disease, I am inclined to believe, from clinical observation and the employment of Kelly's method of direct vesical inspection, that many intractable cases of cystitis are of tubercular origin.

In illustration, permit me to present the following notes :

Julia S., aged twenty years, single, of Swedish parentage, family history negative, had arthritis of the right hip joint when four years of age, and continued under treatment for eight years, with resulting shortening and limited motion. Her health was poor until puberty. First menstruated at fourteen ; the recurrence was irregular, sometimes skipping two and three months. The flow was scant and but slight inconvenience attended each epoch. The patient attended school regularly, and was accustomed to retain her urine from eight A.M until five or six P.M.

This voluntary retention occasionally caused slight distress in the hypogastrium. But it was not until three years ago, while suffering from anæmia, that she began to complain of sharp and lancinating pain on urination. She had also a sense of pressure in the bladder, and was obliged to urinate every two or three hours. The trouble was especially distressing upon standing or walking. Fissure and chronic cystitis were diagnosed, and treated by urethral dilatation and irrigation of the bladder three or four times a week. Santal-Midy three times a day was taken internally. After a year's treatment, without any perceptible improvement and with considerable loss of weight, hæmaturia became a conspicuous symptom. During the next twelve months the patient went from doctor to doctor, several times falling into the hands of well-known specialists. The former diagnosis was concurred in, and very similar treatment followed. In the latter part of April, of this year, a vesical hæmorrhage of more than ordinary quantity, the inability to pass urine, though suffering from a constant

* Read before the Section in Obstetrics and Gynæcology, New York Academy of Medicine, October 22, 1896.

and intense desire to do so, caused her to summon the nearest physician. Several ounces of very bloody urine were withdrawn drop by drop upon catheterization. A few small clots expelled on removing the catheter attended by tenesmus. Notwithstanding large doses of morphine, the pain and tenesmus continued so intense that catheterization had to be repeated every twenty to forty minutes during the night. Several attempts to check the hæmorrhage by hot astringent irrigation and distention were unsuccessful. The writer was asked to see the patient April 30. The hæmorrhage had then continued for two days ; temperature 102 ; pulse 120 ; inflammatory in character. She was suffering intensely, though over a grain of morphine had been administered in eighteen hours. Exquisite tenderness on palpation was well marked all over the region of the bladder, and free blood dripped from the meatus. Under ether, the genitals having been thoroughly cleansed, the urethra was gradually dilated to twenty millimetres diameter and a Kelly speculum introduced. Clots filled the bladder, and made direct inspection for the source of hæmorrhage impossible. After washing and sponging out all the blood and clots that could be removed, the speculum was withdrawn and the finger introduced. On the right side of the neck, including a portion of the trigone and base, an ulcer the size of a silver dollar was detected ; the edges were raised, irregular, and studded with tubercles, which broke down very readily under digital pressure, increasing the hæmorrhage. Several raised papules were found on the trigone near the median line. Having located the lesion, and finding the remainder of the mucous membrane normal, the patch was thoroughly curetted through a fourteen-millimetre endoscope.

After washing out the detritus with a one-half strength Thiersch solution, vesical drainage was established by way of the urethra, using a twist of gauze folded in gutta-percha tissue. Being unprovided with a Paquelin or silver nitrate, cauterization was omitted at this sitting.

The subsequent daily records are as follows :

May 1 and 2 : Bleeding diminished ; tenesmus controlled with morphine and bromides *per rectum*. Bladder emptied itself through drainage. Temperature and pulse 100.

May 3 : Drain withdrawn and bladder irrigated with a saturated solution of boric acid. Urethra cocainized and a twenty-millimetre dilator introduced. The urine continued to escape in-

voluntarily, and contained blood, pus, and tubercle bacilli. Medication consisted of salol (gr. x) every four hours and bromides *per rectum*. General condition improved.

May 4 to 8 : Daily vesical irrigation with a one half strength Thiersch solution. No bleeding. From an ounce to an ounce and a half of a fifty-per-cent. emulsion of iodoform in hot linseed oil or glycerin and acacia was injected after each washing. Pain and tenesmus diminished ; temperature and pulse normal ; voluntary control of urine. On May 9 and 10 the iodoform gave trouble by caking and setting up vesical spasm. Intoxication followed, patient having headache, hallucinatory delirium, hurried breathing, rapid pulse, and an erythematous rash. Physical examination of lungs negative.

May 11 : Iodoform injections stopped.

May 12 and 13 : Cessation of toxic symptoms. General improvement.

May 15 : Urethra and bladder cocainized and a fourteen-millimetre Kelly tube introduced ; the area of ulceration on the right side of neck, trigone, and base appeared as though varnished with thin serum ; the granulations were pale gray and flabby, while the remaining vesical mucous membrane was hyperæmic and covered with minute glistening white specks, which were easily removed by a swab. After carefully drying the surface of the ulcer, argentic nitrate (eighty grains to the ounce) was thoroughly applied, and excessive caustic action controlled by a solution of common salt. The bladder was then washed out with sodium salicylate—one drachm to the pint of boiled water. This method of application was repeated every four or five days, while irrigation with a salicylate solution was made daily. The improvement was prompt, and the number of Koch's bacilli constantly diminished until June 1, when the urine was found to be normal.

The patient was then able to retain her water for from three to four hours during the day and for a longer period at night ; no tenesmus, but urination was attended by a slight burning sensation.

June 10 : Direct cystoscopy exhibited a normal mucous membrane. A pale cicatrix to the right of the neck and trigone marked the site of previous ulceration. On inspecting the vesical neck and urethra with an endoscope, a fissure was located at the vesico-urethral junction situated on the right side anteriorly. The urethra was then gradually dilated to twenty millimetres, and

a fenestrated endoscope introduced until the crack appeared in the fenestra. When thus exposed a finely pointed stick of silver nitrate was drawn through the entire length of the fissure.

July 1 : The patient was sufficiently recovered to leave the city for her summer home. Her vesical symptoms had now entirely ceased, and with tonics, proper hygiene, and plenty of fresh milk and cream she succeeded in gaining some twenty-five pounds in weight.

On August 1 another application of a strong silver solution was made to the region of previous ulceration. The urine was normal, and repeated examination failed to reveal a single bacillus. This case, with those reported by Burrage, Reynolds, Kelly, and others, stands in marked contrast to the previous history of vesical tuberculosis.

October 15 : There has been no recurrence of symptoms ; cystoscopy negative.

23 Seventh Avenue.

A CASE OF OVARIAN CYST WITHOUT ATTACHMENTS IN THE PELVIS.*

By Nathan G. Bozeman, Ph.B., M.D., New York.

Ovarian tumors sometimes rotate to such a degree that the pedicle becomes divided or a complete severing of it by other means takes place. They become then parasitic, as it were, in the pelvis or in the abdominal cavity, receiving their blood supply through adhesions which they form. Dr. J. Knowsley Thornton (American Journal Medical Sciences, October, 1888), in an interesting article, tabulated fifty-seven cases out of six hundred ovariotomies of his own where twisting of the pedicle had occurred, and in four of the cases the tumors had freed themselves entirely from their original attachments. They were mostly dermoid tumors ; it is still rarer for simple ovarian cysts to become detached according to other authorities. The case which I have the honor to report to this society presented all the characteristics of an ovarian cyst with ruptured pedicle, but the two ovaries of the patient were in their normal position and seemed healthy. The inference is

* Read before the Woman's Hospital Society, November 10, 1896.

that it was a cyst developed from a supernumerary ovary.* I find that Dr. de Sinéty,† of Belgium, has reported such a tumor occurring in a child, and also mentioned that he knew of two other cases where the anomaly existed.

Hattie W., negress, age twenty-three, single, referred to me by Dr. E. T. Steadman, at St. Mary's Hospital, Hoboken, February 22, 1895. General health always good with the exception of one attack of muscular rheumatism. Menstruation began at fourteen, and has been regular and painless. About three years ago she remembers to have had frequent colicky pains in the abdomen. One year ago she began to increase in size, and since then has been having every three months very severe pain and soreness across the abdomen accompanied with a rise of temperature and loss of flesh which usually lasted three weeks. On recovering from this she would feel comparatively well. She had just experienced one of these attacks when she entered the hospital complaining of some bearing down pain, pains in the sides and enlarged abdomen.

Examination showed the abdominal wall to be tense and very much distended by a distinctly fluctuating tumor. Diagnosis, ovarian cyst. Operation, median incision. The cyst filled the abdomen and its wall was universally adherent to the perietal as well as to the visceral peritoneum, but could be separated with the hand. A greenish transparent fluid was evacuated by the trocar in quantity about sixteen pints. The sac was gradually drawn out, it seemed to be perfectly uniform in feeling and appearance except the portion in the left lumbar region, where one or two nodules were felt resembling smaller cysts; from this portion a dense cord-like pedicle about the size of a quill and six inches long was traced upward into the epigastric region where it faded away. Intervening between the tumor and the pelvic organs were the small intestines, and the sac was slightly adherent to them. Examination of the ovaries and the tubes revealed them to be in a perfectly healthy state. There was some general oozing after the operation and the abdominal cavity was flushed with a warm normal saline solution and the incision closed with silk-worm gut sutures. The patient made a good recovery. It was my impres-

* Johannes Orth: Lehrbuch der Speciellen Pathologischen Anatomie. Band ii. s. 562. Friedrich Ahlfeld, Die Missbildungen des Menschen, 1880, s. 126.

† Gaz. Med. de Paris, 1875, No. 27.

sion while operating that I had a pancreatic cyst to deal with, but finding no distinct attachment to any of the organs in the abdomen or in the pelvis, I carried the sac afterward to my friend, Dr. J. S. Ely, of this city, for microscopic examination. I have always believed that women of the negro race were particularly free from ovarian cysts, and this is the first that I have encountered. The following is the pathologist's report :

" Your interesting cyst has at last been examined and proves to be ovarian in origin notwithstanding its unusual connections. You will remember that on one side of it there was some dense tissue, rather nodular, and part of it surrounding a smaller cyst about a half inch or so in diameter. This tissue shows unmistakable ovarian remains, *i.e.*, several corpora fibrosa, and is made up of just such rather cellular connective tissue with very thick-walled blood vessels as one finds in ovaries as the result of chronic oöphoritis. Just what that dense, long, cord-like pedicle was originally it is hard to say. It is made up of dense connective tissue, almost devoid of blood vessels, but apparently has one partially obliterated vessel in its centre."

140 Madison Avenue.

RUPTURE OF THE UTERUS AT TERM, FOLLOWING PRIMARY INERTIA ; ALSO A CASE OF CÆSAREAN SECTION.*

By C. A. Von Ramdohr, M.D., New York,

Professor of Obstetrics in New York Post-Graduate Medical School ; Gynæcologist to St. Mark's Hospital and the German Poliklinik.

Before bringing up the subject for discussion, permit me to report to you the history of a Cæsarean section which has so far not been published.

Mrs. B., Russian, twenty-two years of age, was admitted to St. Mark's Hospital, August 20, 1895, having been in labor for fifteen hours, and after various attempts at delivery had been made outside. The patient had a slightly elevated temperature, 101° F. in ano, and a pulse of 86. She was undersized, badly nourished,

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* Read before the New York Obstetrical Society, November 17, 1896.

and had good, strong, regular labor pains. On examination, a vertex presentation, occiput in left position, was diagnosed. Membranes were ruptured, cervix was more or less obliterated and dilatable, with the true conjugate diameter of the *justo minor* pelvis about two and a half inches. This is an absolute indication for Cæsarean section, even for the author of a recent work on obstetrics, who puts such limit at six and a half *cms.*, and adds, in brackets, for the benefit of the student of pelvimetry, that this corresponds to 2.5590 inches. Fœtal heart sounds were weak and at the rate of one hundred and sixty a minute. The usual modern method was pursued, and a living asphyxiated baby of nine pounds' weight was extracted ; no entrance of uterine contents into the peritoneal cavity was noted. The knot of the preliminary rubber constrictor slipped after extraction of the baby and secundines, but the uterus retracted so well that no hæmorrhage of any account was noticed. Muscular and sero-serous sutures were employed, and the abdomen was closed by a double tier of sutures.

The case seemed extremely favorable for recovery, but the temperature steadily rose, and, twenty-four hours afterward, the patient had succumbed to acute sepsis. The *post-mortem* showed the abdominal cavity to be empty, with fresh union of the peritoneal covering. Apparently the patient came in, systemically infected.

On June 18, 1895, Dr. Volkenberg asked me to see with him in consultation a certain Mrs. H., a German laboring woman, thirty-two years of age, in labor for the third time. Both previous confinements had been very tedious and had to be finished instrumentally, the second one by my friend, resulting in the birth of the only living child, now two years old. The patient, a woman weighing about two hundred and forty pounds, had had true primary uterine inertia for forty-eight hours, though certainly in labor, which slight though infrequent apparent contractions indicated. Temperature and pulse were normal. The true conjugate diameter of the flattened pelvis measured about four inches. Passages moist, cervix dilatable, membranes not ruptured, the occiput of the non-engaged head toward the left, fœtal heart sounds distinct and one hundred and forty per minute, the patient nervous and fretful, afraid of and yet desirous for the subsequent and necessary operation to which she had been accustomed. I advised an injection of a fourth of a grain of morphine, to be repeated, if the dose did not put the patient to sleep, and to wait for engage-

ment of the head before interfering. The dose was administered, and, as I afterward heard, the patient slept for several hours and was awakened by strong and frequent labor pains which lasted for three hours and suddenly stopped. Unfortunately the physician could not be reached, and saw her only twelve hours after the last administration of morphine, three hours after cessation of pains, and then in collapse. He immediately sent for me, and I diagnosed rupture of the uterus. A hurried section was performed, and the dead child, still enveloped by the membranes with the placenta, was found in the abdominal cavity. In spite of a subcutaneous injection of normal salt solution, the administration of stimulants and auto-transfusion, patient died practically on the table of shock and acute anæmia. The retracted and perfectly empty uterus showed the place of rupture to be on the left side and in front, commencing below the internal os and extending upward. It measured in the flabby organ about four inches, but the specimen could not be procured. The muscle looked extremely pale and apparently fatty. Child's weight, seven pounds.

I ask you, now, not to enter into a discussion of the methods of operating nor of the choice of sewing material, but to help me by giving your opinion as to how the life of this second woman could have been saved, even if her medical adviser had been present. Here was a woman apparently in good health, though certainly too fat, and having a slightly contracted pelvis; she has slight pains for fifty hours, fell asleep for six hours, has violent labor pains for three hours, which end in rupturing the uterus. Could an obstetrician standing by have determined the exact minute when the rupture was about to take place? Would he not have waited, just as the midwife who was present did, for the head to engage, especially in view of the previous somewhat similar circumstances?

It seems to me the only way, in a similar case, is to recognize primary inertia as a grave symptom, and as a protest, as it were, of the degenerated uterus and flabby abdominal muscles against the superimposed work of expressing the product of conception through the narrowed straits.

And yet we have to proceed with the greatest caution in advocating a more active interference before the first stage of labor is finished, before the membranes are ruptured, and while, apparently, mother and child are doing well. If such men as Winckel, Schroeder, Hirst, Dorland, and hosts of other modern authors

again and again advise patience as the only proper remedy for primary uterine inertia, it behooves us to be careful in furthering innovations.

Unhappily this has been my second case of rupture of the uterus following primary inertia. In this case, which came under my observation through the kindness of Drs. Denhard and Morvay-Rottenberg, the woman, a poorly nourished Russian I-para, did not make proper progress for three days and three nights. She could sleep off and on, her general health was not affected, the fœtal heart sounds were normal, and yet the cervix would not dilate properly. Patience was preached and practised. On the fourth morning Dr. Denhard noticed that the presenting head had disappeared. During the night rupture had taken place without any appreciable shock and the fœtus had disappeared into the abdominal cavity; yet no labor pains, violent enough to necessitate a call for the physician, had taken place. Here also there was a very slightly contracted pelvis, and, besides, a small fibroid unappreciable to the examining finger in the cervix. As the number of such cases is necessarily limited, I would ask you for your experience in similar cases, and would venture to make the assertion, for the purpose of opening a discussion, that: "If a cachectic or fat individual with slightly contracted pelvis has primary inertia uteri, she must be delivered at the earliest possible moment, no matter whether her general condition has suffered or not."

45 Irving Place, New York.

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EDITORIAL.

A MONUMENT TO PASTEUR.

Directly after the death of Pasteur a movement was started in France by a committee to raise a fund by popular subscription for the purpose of building a monument to his memory. This movement has been extended almost throughout the civilized world, and it is eminently proper that every country should be allowed to contribute its share toward the perpetuation of the memory of this great man. The benefits conferred by his lifelong devotion to the cause of suffering humanity have not been confined to any section or country. His life was wholly devoted to science and his work was of universal interest and of lasting benefit to mankind.

It has been a custom throughout the past ages to erect monuments to heroes of the battlefield; how insignificant seem their conquests when compared to such a conquest as that of Jenner over that dread scourge of the human race, small-pox, or of Pasteur over the grim and deadly rabies! It is therefore with peculiar satisfaction that we offer through these pages an opportunity to our friends to subscribe to this fund. Any subscription sent to the editor will be forwarded to Washington, where the headquarters of the Pasteur Monument Committee for the United States is located. We direct our readers' attention to the committee's letter on page 54.

CORRESPONDENCE.

"Ectopic Pregnancy."

To the Editor of the American Gynæcological and Obstetrical Journal:

Sir: You certainly do give us a hard time in your editorial in the November Journal, and, perhaps, not without reason; but it would not be amiss for you to point out to us in what way we are to find out, before conception, who are liable to have an ectopic pregnancy and how to save mother and child when a tubal pregnancy has burst at, say, the third month. These are matters which are deserving of your and our serious and calm consideration. Let us therefore consider in what condition a large percentage of cases of tubal pregnancies come to the notice of the general practitioner and, later, to the notice of the specialist, and we then will perhaps not accuse each other too frequently of a violation of that clause of the Decalogue which says "Thou shalt not kill." The cause of the occurrence of tubal pregnancy is, I might say, deeply shrouded in mystery if nothing worse and, to my mind, all explanations which have thus far been given are fallacious and wholly misleading. This is not to be wondered at from the fact that but little notice was given to this serious condition until the past few years; because, first, it was thought to be very uncommon and, secondly, because it was rarely recognized except on the *post-mortem* table.

We are culpable in that we do not take full notes of every case with which we have to do. If we did this I apprehend that we might find that the large majority of cases, if not all, were impregnated just prior to a menstrual period. Just previous to a menstrual epoch, we have reason to believe, an ovum ripens in the surface of the ovary and, if then coitus take place, the ovum is usually set free and before it has reached the cavity of the uterus the spermatozoa have met it and fecundation has been accomplished. Now it is possible, nay probable, that if the ovum has approached very near to the uterine cavity before becoming fecundated it may still reach that cavity and a normal pregnancy be the result. But, if fecundation takes place while the ovum is still near the free end of the tube, is it not reasonable to suppose that the enlargement of the ovum due to fecundation which is prompt and rapid, will in a few hours almost prevent its passage through

the tube to the uterus? The ovum in its unfecundated state is supposed to be quite large enough to fill the calibre of the tube so that it is in close proximity to the cilia of the lining epithelium of the tube, in order that the motion of these cilia may forward it to its destination, the uterine cavity. Now, if this ovum is increased in size even to a microscopical degree, will it not be delayed in its passage and continue to enlarge until it is impossible for it to pass through into the uterus?

All animals except man have intercourse only during or immediately after what corresponds to a menstrual period, so far as I am able to learn, and only man who was "made perfect" but who has "sought out many inventions" takes no thought of this, but constantly outdoes the brute in this purely animal passion.

This I am free to admit is partly theory but only partly so, for of the few cases of ectopic gestation with which I have had to do I have had nothing to disprove my theory and everything to prove it. I have seen a few cases where I could not obtain a complete history in this respect, but I will give you a short history of two cases where the history was clear:

Case I.—I was called one Sunday in consultation to see Mrs. F., who had been suffering more or less pain in the right ovarian region for three weeks, and on Saturday, the day before I was called, while she was having a movement of the bowels she suddenly screamed with pain and fainted. She was placed in bed and the family physician was called in. He applied leeches and hot poultices, but she grew weaker, and on Sunday, at eleven A.M., I found her in profound collapse with every evidence of hæmorrhage. I diagnosed probable ruptured ectopic pregnancy and advised operation. The husband agreeing, I opened the abdomen which I found filled with blood clots. The rupture was in the tube, about midway between the free and uterine ends, and the pregnancy I judged to be about one month. After her recovery, which was rapid and uneventful, I obtained the following history from the patient. Thirty-five days previous to the operation and three days before an expected period she had had intercourse, four days after which she menstruated about one day, but very scantily. About ten days later she began to have pains in the region of the right ovary which continued to increase in severity until the rupture, the day before operation. Previous to this she had never been sick a day in her life and during her menstrual periods had had no pain or trouble of any kind.

Case II.—Mrs. C. was away from home on a vacation and was taken suddenly ill. I was called in at noon on Monday and found her in collapse. I diagnosed ruptured tubal pregnancy and advised operation, to which neither patient nor friends would accede. She lived until the next morning and died in collapse. I was fortunate enough to secure an autopsy and found the right tube ruptured near the uterine end and a fœtus of about twenty-five days. The following history I obtained from the husband, who is a physician in active practice. Owing to business arrangements the husband and wife were living, for the time being, in different towns, and the wife had visited the husband twenty-eight days previous to her death. This was two days before an expected period. From the patient, before death, I learned that she had been "unwell" four days after seeing her husband, but very "slightly so," whereas she always flowed freely. The history of several other cases in this relation correspond very closely to those given above and it is unnecessary for me to go into detail.

While from the limited number of cases which I have had the opportunity of observing it may look as if my theory were correct, yet I know there may be other conditions which contribute to this dangerous accident; but at the same time I think it would be well to look carefully into the matter in this relation. To the men who have the opportunities for seeing these cases frequently we look for the explanation.

T. A. Stoddard, M.D.,
Gynæcologist to the Pueblo Hospital.

Pueblo, Col.

Note.—We are glad to receive the above communication from Dr. Stoddard, which presents an interesting theory and, in lieu of further evidence upon the causes of ectopic pregnancy, furnishes at least a working hypothesis in regard to this most important problem. We will gladly welcome and give space in this Journal to all communications upon this subject, whose object is to throw light upon the causation of this condition. This does not mean, however, personal statistics of operations performed, unless these furnish the basis of some theory regarding the origin and possible prophylaxis of this dread disease.—Editor.

Twin Tubal Gestation.

Bentonville, Ark., *November 27, 1896.*

To the Editor of the American Gynæcological and Obstetrical Journal:

Sir: As an aid to accumulating statistics on twin tubal gestation, I report the following rare and interesting case: On September 30, 1896, with the assistance of Drs. Chambers, Curry and

Rice, I operated on Mrs. H. C. M. for ruptured tubal pregnancy. The abdomen was literally full of blood which flowed freely as soon as the peritoneum was opened. The right tube was normal, the left ruptured and the uterus slightly enlarged. In the abundant clots, twins were found. The patient died forty-five hours afterward. She was twenty-six years old, and had been married four years without a pregnancy until this unfortunate one. The rupture occurred in the ninth week. The interest in this case is enhanced by the fact that both fœtuses came from the same tube when, as the rule, one is found in the uterus.

CHARLES H. CARGILE, M.D.

A MONUMENT TO PASTEUR.

WASHINGTON, D. C., *December 7, 1896.*

To the Editor of the American Gynæcological and Obstetrical Journal :

SIR : There is enclosed herewith a circular concerning the international subscription for the erection, at Paris, of a monument to M. Pasteur. I have been requested to correspond with you and to secure the co-operation of your JOURNAL, which our Committee desires should be represented in this popular movement. Will you kindly act as an associate member of our Committee, and collect and forward the subscriptions? The necessary blanks for this purpose are enclosed, and I trust you will inform me promptly of the action you take in this matter. Thanking you in advance for your interest and co-operation, I remain,

Very sincerely yours,

WILLIAM B. FRENCH, M.D.,
506 E. CAP. STREET.

Announcement.

It has been decided to erect in one of the squares of Paris a monument to the memory of M. Pasteur. Statues or busts will also no doubt be located at his birthplace and in other cities. The Paris committee has, however, wisely determined that the statue obtained through international effort shall be located at Paris, where it will be seen by the greatest number of his countrymen and also by the greatest number of his admirers from other lands. The Paris committee has for honorary members the President of the Republic and his cabinet, together with about one hundred and sixty of the most prominent officials, scientists and other distinguished citizens of France. The active members of the commit-

tee are J. Bertrand, *President*, member of the French Academy, Perpetual Secretary of the Academy of Sciences. J. Simon, *Vice-President*, member of the French Academy, Perpetual Secretary of the Academy of Moral and Political Science. Grancher, *Secretary*, member of the Academy of Medicine, Professor in the Faculty of Medicine. Bruardel, member of the Academy and of the Academy of Medicine, Dean of the Faculty of Medicine. A. Christophle, Honorary Governor of the Credit Foncier, Deputy from l'Orne. Count Delaborde, Perpetual Secretary of the Academy of Fine Arts. Declaux, member of the Academy of Science and of the Academy of Medicine. Magnin, Governor of the Bank of France, Vice-President of the Senate. Baron A. de Rothschild, banker. Roux, Assistant Director of the Pasteur Institute. Wallon, Perpetual Secretary of the Academy of Inscriptions and Belles-Lettres.

The Paris committee has kindly extended the opportunity to the people of the United States to assist in this tribute of appreciation and love, and has authorized the organization of the Pasteur Monument Committee of the United States.

The members of this committee gladly accept the privilege of organizing the subscription, and of receiving and transmitting the funds which are raised.

We believe it is unnecessary to urge any one to subscribe. The contributions of Pasteur to science and to the cause of humanity were so extraordinary, and are so well known and so thoroughly appreciated in America, that our people only need the opportunity in order to demonstrate their deep interest.

All can unite in honoring Pasteur. He was such an enthusiastic investigator, so simple, so modest, so lovable, and yet so earnest, so great, so successful—his ideals were so high and his efforts to ameliorate the condition of humanity were so untiring that we anticipate an enthusiastic response from the whole civilized world. The United States will vie with the foremost of nations in this tribute. Chemists, zoölogists, physicians and all others interested in science will wish to be represented. No one is expected to subscribe an amount so large that it will detract in the least from the pleasure of giving. A large number of small subscriptions freely contributed and showing the popular appreciation of this eminent Frenchman is what we most desire.

This committee supplies subscription blanks, which should be returned in the accompanying envelope, together with a money

order, check or draft covering the amount subscribed. All checks, etc., should be made payable to "Treasurer Pasteur Monument Committee," and when received by the secretary a numbered receipt will be forwarded to the sender. The original subscription papers will be forwarded to the Paris committee for preservation.

It is our purpose to do our work as largely as possible through societies or other organizations. We prefer to have each organization appoint one of its members as an associate member of this committee with authorization to collect and forward the subscriptions. The amounts thus far subscribed by individuals vary from fifty (50) cents to ten (10) dollars. It is hoped that no one who is interested will hesitate to place his name upon the list because he cannot give the maximum amount.

Please let this receive your early attention and in that way assist our committee which must conduct correspondence with the societies of the entire country.

Dr. D. E. Salmon, *Chairman*, Chief of the Bureau of Animal Industry.

Dr. E. A. de Schweinitz, *Secretary*, President of and representing the Chemical Society of Washington, Chief Chemist Biochemic Laboratory.

Dr. G. Brown Goode, *Treasurer*, Assistant Secretary of the Smithsonian Institution.

Dr. George M. Sternberg, Surgeon-General U. S. Army.

Dr. William B. French, Representing the Medical Society of the District of Columbia.

Dr. J. Rufus Tryon, Surgeon-General U. S. Navy.

Hon. Gardiner G. Hubbard, President of and representing the National Geographical Society.

Dr. Walter Wyman, Surgeon-General U. S. M. H. S.

Mr. C. L. Marlatt, Assistant Entomologist U. S. Department of Agriculture, representing the Entomological Society.

Professor S. Emmons, U. S. Geological Survey, representing the Geological Society.

Dr. Ch. Wardell Stiles, Zoölogist U. S. Bureau of Animal Industry, representing the Biological Society of Washington.

Professor Lester F. Ward, President of and representing the Anthropological Society of Washington.

Pasteur Monument Committee of the United States.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, November 20, 1896.

The *President*, ADDISON H. FOSTER, M.D., in the Chair.

Calcified Uterine Fibroid.

Dr. M. L. HARRIS: The patient from whom this specimen was obtained was seventy years of age. When about forty years of age she noticed a tumor in the abdomen, which gradually enlarged for a period of six years, during which time she had irregular and excessive menstruation. At the end of this time—that is, when she was forty-six years of age, the menopause occurred. Then the tumor was very large and filled the entire lower part of the abdomen. After the menopause the tumor gradually became smaller and for a period of over twenty years gave her no trouble whatever. A year ago she began to have pains with increasing constipation. These pains increased in severity and became so acute as to require constant administration of anodynes. The constipation became very obstinate, requiring cathartics and injections of the severest type to effect evacuation of the bowels. This was the condition when I saw her about ten days ago. Upon making an examination the tumor could be easily felt attached to the uterus. It was freely movable, and from the fact that it had existed for so many years without giving trouble I reluctantly attributed the constipation to the tumor and tried to dissuade her from an operation. She had suffered so much, however, that she had her mind made up to have an operation performed. Her suffering was so intense that she said she would rather die than live any longer. I finally concluded to operate. On opening the abdomen the tumor was found springing from the fundus of the uterus. This little denuded spot here (illustrating) is where the tumor was attached to the uterus. These spots on the posterior surface of the tumor are where two loops of the ileum were attached. The two loops were drawn into the pelvis, so that they were sharply flexed. The explanation which I made of the trouble was that so long as this tumor was large and outside of the pelvis, in the abdominal cavity, it gave no trouble, but as it became smaller and smaller and increased in specific gravity, as you will see, by becoming

calcified, it dropped into the pelvis and the trouble began. In dropping down it pulled the two loops of the ileum with it, so that they were sharply flexed and caused intestinal obstruction. The tumor was removed with the greatest ease ; in fact, after detaching the intestines I simply picked it off. There was no circulation to it, and it left on the fundus of the uterus the slightest incrustation of calcified matter, which with the finger-nail was scraped off with the loss of scarcely a drop of blood. The operation required but a few minutes, consequently there was no shock. The patient rallied from the operation which scarcely affected the pulse in any way. She did nicely for twenty-four hours. On the second day after the operation I received a letter from the attending physician saying that the patient had done well for this length of time. The next day he received a telephone message to come immediately, and on his arrival found the patient had suddenly become comatose, with stertorous breathing, and died. The pulse was strong and full and kept so up to the time of death.

Discussion.

Dr. Newman : What is your theory in regard to the cause of death ?

Dr. Harris : I do not know. I wrote the attending physician for full information in regard to it, but I have not heard from him since. He said that the patient did well for the first twenty-four hours.

Dr. Henrotin : How old did you say the patient was ?

Dr. Harris : Seventy years of age.

Dr. Watkins : What was the condition of the kidneys ?

Dr. Harris : The urine was examined and the kidneys were apparently all right.

Dr. Dudley : I did not hear the report, but desire to make a remark on the specimen because it calls to mind very distinctly a case in which I removed a similar tumor. The tumor was a little larger than this. When I cut down and explored the body of the uterus I felt something hard underneath the subperitoneal structures of the uterus. As I examined it carefully I felt something else, something like a fœtal skull. I was afraid that the woman was pregnant and that I had the fœtal skull under my hand. The sutures and the fontanelles were very closely imitated. Dr. Gourlay, the family physician who was present, reported that he had been giving intra-uterine electricity for a number of months. The

condition was so deceptive that I cut into the uterus only with great trepidation and found a calcified tumor. It was only upon the attending physician's strong conviction of the impossibility of pregnancy that I dared to go on with the operation.

Dr. Henrotin : How old was the patient ?

Dr. Dudley : About thirty-five years of age. The case occurred in the practice of Dr. Gourlay of Downers Grove.

Dr. Henrotin : Have you ever come across such a case in old people ?

Dr. Dudley : I have seen three or four cases. In one the tumor was all broken down and inside of the uterus only a fragmentary shell was left. In one case, referred to me by Dr. H. S. Davis, Jr., there was carcinoma uteri in addition to the calcified tumor.

Dr. Henry P. Newman : I had an instance lately of calcareous deposits resulting from trauma of uterine tissue. The patient had had both ovaries removed several years ago and was sent to me for the cure of extensive adhesions which resulted.

Upon opening the abdomen I found over the fundus and posterior surface of the uterus numerous calcareous deposits corresponding to the bite of volsellum forceps, and to such an extent as to require use of a curette for their removal.

I refer to this in connection with the above specimen to illustrate how slight trauma of uterine tissue may produce calcareous deposits.

Cystic Tumor.

Dr. J. T. Binkley, Jr. : The photographs which I exhibit are of a colored woman upon whom I, with the assistance of Dr. Watkins, operated about two years ago. This case is none the less interesting because of the delay. I show the pictures because of the enormous size of the tumor. The fluid in the tumor weighed one hundred and seventy-five pounds, and the solid portion of the tumor weighed fifty pounds. The weight of patient before operation was three hundred and ninety-six pounds. The case terminated fatally, I believe, because of the too rapid delivery of the fluid.

The tumor was very heavy, thick-walled, with numerous adhesions, which were separated without great difficulty. The patient's heart was noticeably affected whenever traction was made upon the tumor. This, I think, was reflex irritation of the pneumogastric by tension upon the mesentery and stomach.

I recall a case nearly as large in the practice of Dr. Byford, in which I assisted, some four years ago, in which numerous vessels, some as large as one's finger, were ligated. Secondary hæmorrhage made it necessary for the abdomen to be opened a few

FIG. 1.—Cystic Tumor (Side View).

hours after the first very prolonged operation, which Dr. Byford did almost unassisted, locating and tying some bleeding vessels directly below the stomach.

This remarkable case, strange to say, made a perfect recovery.

Fibroid of the Uterus following Double Salpingo-Oöphorectomy.

Dr. BINKLEY : I also present photographs showing a fibroid development in the horn of the uterus following a double salpingo-oöphorectomy. The ovariotomy was performed by Dr. Byford

FIG. 2.—Cystic Tumor (Front View).

some three years ago. The uterus was recently removed at the Chicago Hospital.

I have no plate showing a section of this tumor, but it was found to have entirely enveloped the ligature of the right horn, from which this fibroid developed.

Discussion.

Dr. T. J. Watkins: Dr. Binkley may remember that whenever traction was made upon the tumor under discussion the patient's heart was invariably affected.

Fig. 3.—Cystic Tumor (Patient in Bent Posture).

About four weeks ago I operated upon a woman who had a tumor weighing seventy pounds with universal adhesions. The Interne, who was giving the anæsthetic, stated that at times the pulse became imperceptible, and this condition was synchronous with traction on the mesentery. It is quite probable traction on

Fibroid of the Uterus following Double Salpingo-Oöphorectomy. (See page 61.)

FIG. 1.—(2) Tumor in Douglas' Pouch ; (3) the opposite stump ; (4) the fundus ; (5) the cervix.

Fibroid of the Uterus following Double Salpingo-Oöphorectomy. (See page 61.)

FIG. 2.—Anterior view of uterus ; (6) ligature on left side ; (8) tumor at the right horn.

the mesentery was the cause of the depressed heart action in these two instances.

Dr. J. A. LYONS : Mr. President, I wish to say but a word or two in regard to the large tumor removed by Dr. Binkley.

I had the pleasure of being present during the very formidable

operation, noting the condition of the pulse throughout its entire progress, so that I can readily recall the peculiar heart action alluded to by Dr. Watkins. However I did not particularly notice that it was synchronous with tension upon the mesentery.

In contradistinction, therefore, to the idea presented by Dr. Watkins, I should rather incline to believe that the action of the patient's heart was due to the sudden change in the blood supply, a great number of the abdominal vessels being unavoidably allowed to bleed during the hasty removal of the excessively large tumor, hence the return circulation was unsteady and insufficient, so that an irregular heart action, followed later by entire collapse in diastole, was a natural result in an otherwise weakened and shocked condition.

Dr. Fernand Henrotin : I would make the one remark relative to the statement frequently made that after removal of the ovaries and tubes shrinking of the uterus occurs. This is apropos, because we have here a specimen in which a fibroid developed after pressure made around the stump. It reminds me strongly of a case I operated on seven or eight months ago, where I had removed diseased ovaries and tubes very carefully and closely to the uterus some twenty-two months before. At that time the uterus was small, atrophied, and rather undeveloped. It was in a young woman. The body of the uterus was not larger than two small thumbs. The patient was ill, complained of menorrhagia and other symptoms. In the second laparotomy, I incised through the old scar later, and found the uterus about four times larger than it was at the first operation. It was a perfect specimen of a fibroid of the uterus, which developed in the body of the organ. These remarks are simply offered as a refutation of the claim frequently made that the uterus atrophies after removal of the appendages. It is furthermore an argument in favor of removal of the uterus when we have occasion to remove both tubes and ovaries, unless there is some contraindication.

Dr. Henry T. Byford : I believe with Dr. Henrotin that when the ovaries and tubes are excised we should, if possible, remove the uterus. The effect of the ligation upon the uterine circulation is temporary, and an endometritis may counteract, to a great extent, the beneficial influence of the artificial menopause which results. Permanent ligatures, such as silk ones, should not be left in the abdominal cavity, as they are liable to produce irritation, as is proven by the case mentioned by Dr. Binkley.

Dr. Binkley : I would like to ask Dr. Byford if he uses catgut in tying off the broad ligament ?

Dr. Byford : I use nothing but catgut.

Dr. Binkley : Do you tie it off *en masse ?*

Dr. Byford : I first tie the ovarian arteries with a little of the broad ligament, then I tie the uterine arteries, and then with a third ligature I take in the whole ligament.

Diffuse Peritonitis.

Dr. Binkley : I wish to briefly report a case of diffuse peritonitis which is of great interest. Dr. McArthur and I operated night before last at six o'clock. The patient was a young woman twenty-four years old, and was brought into the hospital day before yesterday at noon. She had every symptom of appendicitis. She was perfectly well until Monday noon, when temperature developed with general abdominal pain, decidedly marked at the centre of the abdomen. She was sick all Monday night and vomited frequently on Tuesday. Wednesday morning Dr. Yount brought her to me. She was in great pain. Dr. Steele and I examined her, and found that there was more tenderness on the right side than on the left. She had that peculiar facial expression which attends general peritonitis—open mouth, lips drawn back, breathing rapid, and her temperature was 101°. Dr. Steele and I thought we would watch her a few hours, and endeavor to get an action of the bowels. We succeeded, with small doses of calomel given every thirty minutes, until a grain and a half had been given, in effecting one or two slight movements of the bowels. Considerable flatus was also expelled.

The symptoms became very much worse, and I determined to operate. I wanted counsel, and Dr. McArthur came at six o'clock. Everything was ready to take the patient immediately to the operating room. As soon as the patient was anæsthetized I made a vaginal examination. Slight pathology could be found along the uterine appendages on either side. The patient presented every appearance of diffuse peritonitis, and we thought it was due to appendicitis. We could not be certain, however, and decided to compromise upon the line of incision. This was made just to the right of the left rectus. A free incision was made, and pus escaped immediately. The entire abdominal cavity was plastered with lymph, and the bowels were very much congested.

Our first procedure was to feel for the appendix, which we

found absolutely normal. We next examined the pelvic organs, and found the tube very highly congested, and slightly enlarged. I could not, however, press out any pus from the fimbriæ. In fact, the tubes did not appear sufficiently diseased to account for her condition. We therefore carefully delivered and examined all of the intestines which could be brought out of the cavity. As we ascended toward the diaphragm, the intestines and peritoneum appeared more normal. We therefore believed that while the tubes gave but little evidence of disease, the origin of the trouble must have been in them. The abdominal cavity was thoroughly washed out with hot normal salt solution, at 110° F. The intestines were also thoroughly washed, and kept protected with hot towels wrung out of normal salt solution. A large rubber drainage tube was inserted through Douglas's *cul-de-sac*, and a large Mikulicz's drain was placed in the pelvis. At the conclusion of the operation those present thought the patient would die in from one to three hours.

I am happy to say to you that now, at the end of two days, the patient is improving.

Dr. NEWMAN: What was the pulse prior to the operation?

Dr. BINKLEY: It was 110°. When I telephoned Dr. McArthur that I had to deal with a case of diffuse peritonitis, with pulse of 110°, he replied, "Very improbable. I do not believe it is diffuse peritonitis." Upon his arrival, he very quickly verified the diagnosis, which the operation proved beyond a doubt.

Dr. NEWMAN: In any previous case do you know of a pulse of 110°?

Dr. BINKLEY: No, I have known it to be 150 to 160. The pulse was certainly very misleading in this case. If this case recovers, my percentage of recoveries in diffuse peritonitis will be just fifty per cent. At the date of reviewing this paper, eleven days after the operation, the patient is eating and sleeping well—temperature normal. She will undoubtedly recover.

The following papers were then read:

Classification of Inflammation of the Uterus and its Relation to Circumuterine Inflammation.

BY E. C. DUDLEY, M.D.

(See page 1.)

A Basis for the Diagnosis of the so-called Inflammatory Diseases of the Uterus.

By C. S. Bacon, M.D.

(See page 12.)

The Prognosis of Inflammatory Conditions of the Uterus, Endometritis and Metritis.

By J. T. Binkley, Jr., M.D.

(See page 25.)

Treatment of Endometritis.

By T. J. Watkins., M.D.

(See page 27.)

On motion the discussion on these papers was postponed until the next meeting.

Official Transactions.

T. J. Watkins, *Editor of Society.*

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, November 17, 1896.

The *President*, R. A. Murray, M.D., in the Chair.

Rupture of the Uterus at Term, following Primary Inertia; also a Case of Cæsarean Section.

By C. A. von Ramdohr, M.D.

(See page 46.)

Discussion.

Dr. H. J. Boldt said that he desired to put on record two similar cases to those narrated in the paper. One was a consultation seen down town, during the past summer, a large, strong woman, who had a similar history of primary inertia, subsequent to that the occurrence of severe labor pains, sudden cessation of the

labor pains. The attack was precisely the same as in the cases narrated by Dr. von Ramdohr, and the etiology was about the same.

Dr. H. L. Collyer said that he thought inertia of the uterus proper was rather rare, although there are some instances where oöphorectomy has been performed, leaving only one tube and ovary in the pelvis, thereby taking the support of the uterus away on one side, giving inertia to the uterus, and in that way simulating primary inertia. In those cases inertia is present, and yet one feels certain that it is not correct to perform Cæsarean section. He thinks it is a very good point to remind men where inertia does occur that it is a forerunner of fatty degeneration of the uterus and should be looked upon in that way. He cannot see that there was any indication of interference in the case that Dr. von Ramdohr reports, where rupture occurred, and the teaching is to wait; but it is the duty of obstetricians to watch every case carefully, making an examination from time to time, and not to be at such a distance as to be unable to be reached at such a critical time, although when rupture of the uterus occurs, unless one is present within a few minutes, there is no need for his presence.

Dr. Simon Marx said that if a diagnosis could be made of fatty, or cancerous or fibroid degeneration of the uterus in a woman in labor, then the Cæsarean Section would be indicated. In the case of primary inertia the cause is obscure, but if the cause can be removed it should be acted upon and the condition will be improved. And yet he believes that it calls for Cæsarean Section for one cause only.

Dr. von Ramdohr: I did not call for that; I called for active interference, not Cæsarean Section.

Dr. Marx (continuing) said that active interference could in nearly all cases be performed from below, with manual dilatation of the os. And yet the question would arise, were these operations to be done, whether the operation would be really indicated. How many cases of inertia are seen in women in ordinary practice, where by putting them to sleep or giving them quinine the condition disappears and entirely clears off? The most frequent cause is a malposition of the presenting part, and he believes that if the truth were known, in all these cases of supposed primary inertia the cause is not so much that as it is the malposition, more especially the occipito-posterior. The first case which Dr. von Ramdohr presents is one which puts a new light on the subject of Cæsarean

Section *versus* the Porro Operation, as indicated last May by Dr. Coe before the American Gynæcological Society when he made the point whether it would not be better instead of doing Cæsarean Section to do the other. In the opinion of the speaker, that is going a little too far the other way ; but he thinks the condition confronting Dr. von Ramdohr was not a systemic infection but local sepsis, and he asks whether it would not have been advisable in this particular case, instead of doing the classic Cæsarean Section, to have extirpated the uterus at once, and thus get rid of the focus of infection, which probably lay in the pregnant uterus.

Dr. E. A. TUCKER said that he thought the author of the paper was justified in waiting as he did. Ordinarily those cases turn out all right ; when you go back after a few hours, the patient is refreshed, the labor proceeds and usually everything goes well, where there is nothing but the inertia present.

Another point is in reference to the fatty condition. He has had several such cases, and in every case, without exception, there has been inertia. It is a question in his mind whether the uterus in those cases does not have more fat in it than is normally present. Certainly the pelvis is lined with fat, which makes delivery very difficult through it. The patient is easily exhausted, and after experience with several such cases, every one of which ended with operative interference in order to deliver, he has concluded that he will not wait as long with women of that nature, that is, that he will interfere earlier with a woman who is enormously fat than with one who is of ordinary size. Possibly the fatty condition might be an element in the early rupture of the uterus in those cases. A fatty uterus naturally would not stand anywhere near the strain that a normal uterus would stand.

Another question which comes up is, when is the proper time to rupture the membranes ? It is a very hard question, and even after long experience obstetricians find themselves making mistakes. As the case in question strikes him now, he thinks that if the membranes had been ruptured at the time the writer saw the patient and gave the morphine, possibly it would have been wiser, and yet it is not absolutely certain. If the cervix is dilatable he can see no advantage in leaving the bag of membranes, and there are advantages in not leaving it any longer. If the membranes are ruptured, that in itself will stimulate the uterus and produce the action which is desired : inertia will give way to vigorous uterine pains. If the uterus fails, then comes the time for operative

interference. Usually, if the cervix is not well dilated and is not dilatable, it is not time to rupture the membranes, but there are exceptions even to this rule.

Dr. Malcolm McLean said that he thoroughly endorsed all that Dr. Tucker had just stated. He would emphasize one point alluded to by Dr. Marx, and that is the very great significance of inertia in a large number of cases, as pointing to some malposition or malpresentation of the child, chiefly that alluded to, the occipito-posterior position of the head. He has seen this so frequently as to learn well the lesson from it. Given a case of an ordinary, average, normal woman—not an abnormal one, such as Dr. von Ramdohr's was—but a woman fairly well built and her organism in proper shape, with inertia, apparent primary inertia, no action of the parts which ought to be in action, in a great majority of such cases it will be found that it is due to mal-position or mal-presentation of the parts to the pelvis. Nature has so well arranged this thing that it revolts against attempting to force the part into the pelvis at an angle and under circumstances where it is mechanically impossible and a violation of the laws of physics. He had a case recently where this very thing occurred; the woman had been in labor for sixteen or seventeen hours when she ought to have had a reasonably easy time, yet she had inertia, she was sufficiently kept in suffering to be in what she called "agony," and without any attempt at progress at all. There was no engagement of the head, there was but little dilatation of the cervix, there was no rupture of the membranes. The attending physician said that he had introduced his hand into the pelvis, and that the head was presenting normally, to the left front. The speaker introduced his hand and found it was just the other way—it was the right posterior instead of the left anterior, and so far around as to be playing loosely about the brim of the pelvis. He believes that Dr. von Ramdohr was perfectly right in waiting in his case. He would have done the same thing. It is good practice, and in ninety-nine cases out of a hundred will turn out all right. This happened to be a woman whose tissues were rotten, they would have given away anyhow.

The President said that the discussion was on the cause of the condition of primary inertia, what it is, whether it precedes rupture, whether it can be diagnosed, and what shall be done in such cases. He regards Dr. von Ramdohr's paper as one of the best that he has heard on an obstetrical subject in a long time. As for

himself, he has seen four or five cases of rupture of the uterus, every one occurring without the classical symptoms of rupture of the uterus ; there was no tumultuous pain, no sudden cessation of labor with sharp cries, no hearing of the tear in the uterus, no sudden flow of blood. The only symptoms that appeared were cessation of labor, recession of the presenting part, and collapse. One of those cases occurred while he was House Surgeon in Bellevue Hospital. Six or eight persons sat within a short distance of the patient, and no symptom was observed except that the patient was more quiet. In every one of the other cases he has seen, the labor had subsided so much that the attendants had either left the patient to herself or had gone to another room, and the thing occurred while they were away. In three of the cases there was not primary inertia, and in the other two there was primary inertia in a uterus that had been whipped up and stimulated. How can it be determined whether it can be whipped up, whether it is primary inertia or mere laziness, whether the power is there? The remarks as to these very stout women having very flabby uterii are, as a rule, well borne out by experience. Generally they are well formed in their pelvic measurements. The several parts do not form any impediment, but they do have weak uteri, and if the weak organs are stimulated and care has not been taken to see that the presenting part is in such a line with the pelvis that the labor can be quickly terminated, a certain risk is run. To a certain extent that point can be diagnosed. Generally the patient is fat, but beside that, it will be found that when the pains come on the patient suffers more agony than should be evinced. It is found also that the presenting part does not descend, that the cervix does not soften. Then there is the contrary condition, where the uterus has been laboring hard and has gotten tired out, where the uterus contracts with each pain and becomes almost tetanic in its contraction, and that almost always precedes a condition where the uterus relaxes and the patient shows all the evidences of exhaustion. If in every one of those cases the uterus is stimulated, a risk is run. If with the tetanic condition the uterus is stimulated it results in such a contraction that almost invariably either the child is lost from the constant contraction or it is with difficulty resuscitated. He has seen it mostly in those cases where it has been due to overdoses of ergot or of alcohol and ergot. In the other case, of primary inertia, the uterus should never be stimulated, but the proper course is to interfere. He calls to mind a

remark which Dr. McLean has made a number of times in this Society, which he thinks is upheld by most of those present, that where there is doubt as to the position of the child and as to the capabilities of the pelvis, and as to the relation of the cervix to the pelvis, the hand should be introduced into the pelvis. To attempt to measure the pelvis with the finger under these conditions is out of the question, and it is almost impossible to determine whether it is two and three fourths or three and one half inches. The measurements under such conditions are very fallacious. If that condition is found in a large, fatty woman with a weak uterus, the proper course is to give her rest and watch for a recurrence of pain, and seeing that the head is in position, do manual dilatation of the cervix under an anæsthetic. As to treatment of the rupture, in two of the cases he saw it occurred into the broad ligament. The same symptoms were present, with the exception that the collapse in these cases was extreme and the effusion went up behind the pelvis, and the peritoneal coat was thrown up into such folds that it looked as if you were cutting through a mass of tissue eight inches thick before you got into the peritoneal cavity at all. She was almost moribund after the delivery. We do have these cases that are not up to the classical description in the text-books. The speaker had recently been called to a case in New Jersey where the patient had been in labor from Tuesday until Sunday, and he delivered her within twenty minutes with the forceps. The cervix was hanging in shreds, so that instead of endeavoring to repair it he had to tie the lacerated tissue point by point and cut off the shreds to prevent septic infection. She made a good recovery. Ordinarily that would not occur with any woman without having it result in rupture of the uterus.

Dr. von Ramdohr (in closing) said, as to the criticism of Dr. Marx, that after having drawn the iodoform gauze through the uterus, washed out the vagina and disinfected, he thought he had done enough, and that the healing would take place and that a Porro would not be necessary. Referring to a remark of Dr. Tucker, he would say that even rupture of the membrane is an interference leading to delivery. He does not mean simply delivering by Cæsarean Section, but after manual dilatation, for example by version, etc. Where the uterus has to do extreme work and the tissues are weak it is the duty to throw the waiting method to the wind before any accident like rupture of the uterus takes place.

Large Fibro-sarcoma of the Ovary, with Specimen.

Dr. J. Riddle Goffe: A woman of twenty-eight, single, under sized, was sent to his class at the Polyclinic on Saturday last by a practitioner of the city who had diagnosed the case as fibroid tumor of the uterus. The history showed that she had never suffered from excessive menstruation, nor any hæmorrhages, nor any pain until during the past summer. Had always been perfectly well, but in August had severe pains in the lower part of the abdomen. Her physician told her she had a tumor, since when she has had some pain. Upon examination he found a solid tumor filling the pelvis and extending up into the abdomen above the umbilicus, with a prolongation on either side reaching out to the anterior superior spines of the pelvis. There was a little mass behind the symphysis that he could feel through the abdominal wall, and which he supposed was a growth from the tumor. Yesterday morning he operated, and on opening the abdominal cavity found a small uterus behind the symphysis, perfectly free from any connection whatever with the tumor ; this was the small mass felt through the abdominal wall.

Behind the uterus filling the pelvis and extending in the directions and to the extent previously indicated was a solid tumor with an evident attachment to the right broad ligament. The tumor had evidently rotated on its axis from right to left, carrying the broad ligament with it and covering itself with it on its entire anterior and right lateral aspect. The fimbriated end of the Fallopian tube was fully two inches to the left of the uterus. The circulation in the right ligament was so obstructed that its veins formed great sinuses reaching across the tumor, and rendering the exact situation quite perplexing. By a little study however the proper relations revealed themselves. The diagnosis was changed to fibroid of the ovary and its removal proceeded with.

On examination under the microscope it proved to be a fibrosarcoma. The section through it shows radiating lines from various centres, which is characteristic of a fibrosarcoma. There were no adhesions. There were no other evidences of an ovary on that side ; the Fallopian tube was adherent by its extremity to the tumor and was removed with it.

Dr. Joseph Brettauer inquired as to the condition of the left ovary.

Dr. Goffe replied that the left ovary was perfectly healthy, as

well as the Fallopian tube of that side, and he took no steps whatever to interfere with them. As to one point in technique : after cutting down the broad ligament on the right side and removing the tumor, he attached the right side of the uterus to the pedicle of the broad ligament of that side, so as to retain it in position and give it support.

Dr. BRETTAUER said he had asked the question because in the great majority of cases of fibro-sarcoma of the ovary the ovary on the other side is affected at the time of the operation or will be affected very soon after. It brings to his mind a case he operated on two years ago—a young girl eighteen years of age, with a large sarcoma of the ovary. The other ovary was apparently healthy. Eight months afterward the girl had a tumor the size of his two fists in the other ovary, which was growing very rapidly, and which he had to remove. He had since then informed himself that this is quite a usual thing.

Dr. H. N. VINEBERG said that three years ago he had a case of carcinoma of the ovary on one side. The other ovary, being normal, was left behind. The girl has been under observation three years and there has been no recurrence. Like sarcoma, carcinoma is said to occur most frequently on both sides.

Dr. MCLEAN said that three years ago he presented a case of a very large fibro-sarcoma of the ovary, diagnosed by a pathologist here, in which the same suggestion was made as to the diseased condition of the other ovary. He has watched the woman and delivered her of a living child, but there is no evidence of disease as yet.

Dr. J. E. JANVRIN said that some seven years ago he operated upon a case of sarcoma of the right Fallopian tube, in which the other tube and ovary were sound. Unfortunately, the patient died from the operation. He had reported that case, with two others, one operated on about a year subsequent to the first, and the other still a year later. In both of those later cases there was carcinomatous infiltration in the meshes of the broad ligament, the ovaries not being affected in either case, the disease being confined strictly to the cellular tissues, developing in the folds of the broad ligament. The patients both recovered and are living to-day. They are both in good condition.

Dr. CRAGIN said that so long as it was the general impression that bilateral disease of the ovary in sarcoma is the rule, experience in this particular is of value and should be related. He can

add one more to the list of those where there has been no recurrence, a specimen presented to this Society in 1893, of spindle-celled sarcoma of the left ovary. He has seen the woman within a short time and she has had no recurrence.

Dr. Goffe said that he agreed with Dr. Cragin that the experience of men in these cases is very valuable ; and the fact that so many have been enumerated here where the appendages on the other tube were left without developing a similar condition, argues very strongly in favor of leaving the appendages unless there is evidence of disease.

Dr. Janvrin reported a case, the specimen not being present, of fibro-lipoma of the kidney. " I was consulted last June by a lady sixty-two years of age who had a growth in the left abdominal region below the kidney, which had been growing for seven or eight years and had been variously diagnosed as fibroid cyst and a fibroid condition of the uterus. She was a small woman, weighing perhaps one hundred pounds, and during the preceding three months, dating back to April last, she had felt some pain, which was, however, slight, the principal symptoms from which she suffered being from pressure. I made a careful examination and diagnosed it as sarcoma of the left kidney. Dr. Goffe assisted at the operation. On examination under ether it was found that the tumor, which occupied the left side and seemed to be just below the kidney, taking up a portion of the kidney space, seemed to have a growth from it on its right side, projecting beyond the median line. Both the speaker and Dr. Goffe were of the opinion that it was a sarcoma. As it was a very large growth it was determined to remove it through the abdominal wall, and so I made the ordinary abdominal incision, and pushing the intestines to one side, cutting through the posterior peritoneum, came down to the growth. As soon as I saw its white, glistening appearance I was sure it was not a sarcoma. In going around it and lifting it up it was found that it was an outgrowth from the capsule of the kidney, and the kidney was not in any way affected. It was an easy matter to detach it and to ligate with catgut the small attachment. In order to leave this large cavity thoroughly shut off from the peritoneal cavity I made a counter-incision in the back and introduced gauze, draining, of course, in the same method as would have been done if I had removed it through the back, and then closed up the posterior peritoneum with catgut, and the anterior abdominal wall. The patient made an excellent recovery. The

pathologist reports that it is a pure fibro-lipoma developing from the capsule of the kidney."

Discussion.

Dr. Goffe said that the diagnosis must always be more or less in doubt. Of course one can discover if there is a tumor present, and can also satisfy himself pretty conclusively of its origin, but a solid tumor like that coming from the kidney is more apt to be a sarcoma. In this instance it proved to be a fibro-lipoma.

Laparotomy for Intraligamentous Cyst; Diseased and Adherent Adnexa and Retroverted Uterus; Undetected Tear in Rectum; Death in Seventeen Hours.

Dr. Hiram N. Vineberg: I have recently met with a very distressing experience, and as it embraces a few features of interest and of instruction (at least to me), it may be serving some useful purpose to relate it.

The patient was a girl twenty-two years of age who had never menstruated, and who for the past six months had been suffering from abdominal pain, loss of flesh and of strength. During the past summer she frequently took to her bed for a day or two, saying that she did not feel well.

As a child she had suppurating glands in the neck, and when thirteen years of age the glands in the right inguinal region had undergone slow suppuration, leaving a moderately sized scar just above Poupart's ligament.

On examination I found a ruptured hymen, a distended vagina, a small uterus lying retroverted upon the rectum, a cystic tumor the size of a small hen's egg on the left side, and a smaller cyst on the right side. The uterus and adjacent masses seemed to be moderately fixed.

On opening the abdomen, the tumor on the left side proved to be somewhat larger than I had anticipated, was lying deep in the pelvis at the side of the uterus and covered with peritoneum. It was an intra-ligamentous ovarian cyst, which proved to be exceedingly difficult to enucleate. No pedicle could be obtained, but the resulting wound in the broad ligament was carefully closed with a continuous catgut suture.

On the right side the tube and ovary were matted closely together, were very firmly adherent to the floor of the pelvis, and attached to their lower border were two cysts each the size of an

English walnut. The whole mass was enucleated without any great difficulty, ligated in the usual way, and ablated.

After the tumor on the left side had been removed, the anterior wall of the uterus near the fundus had been seized with a volsellum and it came readily forward with moderate traction. It was ventrofiscated to the rectus muscles and fascia by two catgut sutures. The pedicles and pelvic cavity, with the patient being in the Irendelenburg position, were carefully inspected before closing the abdomen, and nothing abnormal was noticed. I reflected for a moment on the advisability of packing with gauze on account of the extensive adhesions, but as everything seemed perfectly dry, and as the raw surfaces had been sutured over with peritoneum, I decided to refrain from packing and closed the abdominal incision in the usual manner. The operation, though tedious and difficult, was unattended with any great loss of blood, and the patient was in good condition at the end of it. In accordance with my usual custom after a laparotomy the patient was given an enema of about a quart of warm saline solution before she left the operating room. I saw her after she had been returned to bed. Her condition was satisfactory, a pulse of 96 and of good volume. This was at eleven A.M. At six P.M. the house surgeon, in compliance with my request, telephoned that the patient's condition was good, though she had a pulse of 132 and a temperature of 101°. I felt no worry about the rapidity of the pulse, as the patient was of a very nervous temperament, and I looked upon it and the slight rise of temperature as probable evidence of reaction from a very severe operation.

At 10.30 P.M. I received another telephonic message from the house surgeon saying that the patient was in a very critical condition. I reached the hospital half an hour later and found her with a very anxious expression, breathing rapidly, moderately anæmic (though she had always been anæmic), and a small thready pulse which could scarcely be counted. The abdomen was only slightly distended, and the patient was complaining of great thirst, but was not vomiting.

The problem that confronted me was whether it was a condition of shock or of intra-abdominal hæmorrhage. Sepsis running such a fulminant and rapid course in a non-septic case seemed to be out of the question. I had the patient brought into the operating room and the abdominal stitches were hastily cut open. To my great surprise a large quantity of turbid grayish fluid escaped. I then suspected what had taken place—the bowel had been inad-

vertently opened during the operation and the fluid was furnished by the enema given at the completion of the operation, and the second which was administered at ten P.M. when the patient was sinking. I flushed the abdomen with warm saline solution, and as the patient's condition did not warrant any further interference I merely packed the pelvic cavity with iodoform gauze and had the patient returned to her bed. She died at five A.M., seventeen hours after the operation. After death, on making a search for the tear in the bowel, it was found in the rectum about three inches above the sphincter. It was irregular in outline and readily admitted the index finger. The tear in the rectum was no doubt produced on bringing the uterus forward with the volsellum, though I had used but very little force in doing so. I blame myself for this part of the technique, although it is that which is usually followed. I don't think the tear was caused while I had hold of the volsellum, but it was given in the hands of an assistant while I attended to the removal of the mass on the right side, and he may have unconsciously employed undue force. Still I believe had I employed my fingers to liberate the uterus from the rectum, to which it seemed to be only moderately adherent, the accident could either have been avoided or at least might have been detected at the time of the operation and its disastrous consequences prevented. The case was further instructive from the circumstance that had I not suspected intra-abdominal hæmorrhage the abdomen would not have been reopened and the death doubtless would have been attributed to shock. How many cases of death put down to shock would, on being analyzed, be found to be due to such or a similar accident?

Dr. J. Duncan Emmet said that he agreed with the author of the paper that it was a very unfortunate action to put on the volsellum to draw the fundus forward when it was adherent posteriorly. Any wound to an organ which is to be left in the peritoneal cavity and is not repaired at the time, is a great mistake. He has on a number of occasions separated an adherent uterus in the course of laparotomy, but he has always done it with his fingers and never employed any instrument for that purpose. No other method is safe or can be safe.

Dr. Collyer thought an accident of this sort is liable to happen to anybody, and did not consider it was on account of drawing the uterus forward forcibly. In one case he saw, there were a number of adhesions with distended tubes, and both tubes were

retro-displaced and adherent. Evidently they had been pus tubes. The tumors were made out in that locality prior to operating. At the time of the operation the adhesions were difficult to separate, and he stated at the time that there was an opening evidently in the rectum which if left alone would perhaps heal, because it was small. The patient rallied very nicely, but on the third day suddenly got shock and died within a few hours. It is his opinion that in cases of adhesions posteriorly to the gut or very severe adhesions it is advisable not to attempt enemata unless they are given very high, because by distending the bowel, which is already weak, it is very apt to tear, resulting in collapse of the patient.

Dr. G. T. Harrison said that he thought Dr. Vineberg deserved a great deal of credit for having the courage to report a case like this, because we learn a great deal more from these cases than from the successful ones ; they serve as a beacon light to warn others off the same dangerous coast. He recently had a case which was very interesting on account of the difficulty of diagnosis. He was called into consultation by Dr. Ashmead, who correctly diagnosed a pregnancy, but a pelvic inflammation clouded the picture. As the speaker was out of the city, Dr. Pryor was called in. Dr. Pryor found some inflammation there, on the left side, and advised the operation of attacking the seat of inflammation through Douglas's *cul-de-sac*. On the speaker's return to the city he saw the patient, and took the same view, and being convinced there was some pus in this inflammatory swelling approached it from Douglas's *cul-de-sac*. Found the uterus was bound down by extensive adhesions, and had to work his way up gently into the pus focus, which was found and evacuated. Some of the adhesions were very extensive, cordlike, and some were so firm that he could not by blunt dissection break them up. Got out some membrane which he was sure was chorionic, which was proof positive to him that it had been a tubal pregnancy. Packed it, and the patient got on very well for awhile, but when he removed the dressing he found some fæcal matter. Evidently in working his hand up into the pus focus he had gone into the rectal cavity. But as he did not go into the peritoneal cavity he had only to deal with a simple little fistula that did not cause any trouble, as it healed spontaneously.

Dr. Brettauer said that he thought injuries to the rectum or small intestines happen more often than we have any knowledge

of. They are not noticed during the operation, the abdomen is sewed up and nothing comes of them. He is sure that those operators who make an inch or an inch and a half incision and remove that way the most extensive adherent adnexa sometimes open the rectum or small intestines, but they are left alone afterward and are not disturbed. Some give morphine or opium, and within a very few hours these small openings are closed, and of course the longer the bowels are left alone the firmer the closure becomes. In these cases it is best not to try to stimulate them by the rectum. If they need fluid they can have it under the skin or through the stomach. That an enema is not always fatal when in the abdominal cavity by accident was shown by a case the specimen of which he presented here some time ago, of a very large fibroid ; in the course of the operation he had turned the sigmoid flexure in the lower part of it where it begins ordinarily to descend, right through about three quarters of its circumference, and what came out was the enema which had been given as a stimulant before the operation, the woman being in a critical condition. She made a smooth recovery.

Dr. Vineberg, in closing, said that he quite agreed with the criticism that it is wrong to use undue force, but he thinks an accident of this kind will occur from time to time, no matter how careful a man may be. It was the first in his experience, and it has fallen to his lot to have had as difficult cases as can well be met with. In his opinion, if he had done what he originally wanted to do in this case, packed with iodoform gauze, the serious result might have been averted. Where there are these extensive adhesions, if one is in doubt it is better to pack with gauze.

Hæmatoma of Right Broad Ligament : Iodoform Poisoning ; Three Profuse Hæmorrhages in Next Two Weeks.

Dr. Andrew F. Currier reported the following case, which seemed to him interesting from its many complications. Patient when first seen (November 16, 1895) was twenty-three years of age, of medium height, slender, delicate appearance, and was suffering with an acute attack of pelvic peritonitis. She had been ill much of the time since a miscarriage six years previously. A fluctuating tumor as large as an orange was made out in each ovarian region. Four days later these tumors were removed by abdominal section, one of them being ruptured in the operation. For a few days she did very well, and then followed a period of

prolonged high temperature, with deep abscesses which were opened as the indications called for it. These abscesses occurred after the healing of the abdominal wound by primary union ; there was also connected with them sore throat and apparent general infection, from all of which, however, she recovered entirely and enjoyed a period of fairly good health until October 10 of this year when her physician again sent her to me with a fluctuating tumor in the right iliac fossa as large as my fist. Though there had been no history of febrile movement I assumed that it was a pelvic abscess and the inheritance from her previous infection. On October 14 the patient was anæsthetized and an incision made through the posterior vaginal fornix. When the peritonæum was incised there was a profuse discharge of blood, but no pus, and after careful search no tumor could be found. The woman has had no menstrual flow since her operation a year ago, and what was the origin of the hæmatoma I do not know. The peritonæum was tuberculous, and this process was also recent, for there were no tubercles present a year ago. The edges of the vaginal and peritonæal wounds were stitched together and three long strips of iodoform gauze were carefully packed in the pelvis and an additional portion in the vagina. The following day there was high temperature with delirium, the latter disappearing after the vaginal gauze was removed. On the fourth, fifth and sixth days the gauze was removed from the pelvis, and on the seventh severe pain in the rectum was complained of and the presence of pus and fæces showed that the rectum had been penetrated. The wound was kept as clean as possible by irrigation and gauze drainage, but five days later I was called out very early in the morning on account of a profuse hæmorrhage. I could find no bleeding vessel, nothing but granulating tissue. Two days later a second profuse hæmorrhage occurred, also very early in the morning, and in the afternoon of the same day a third, and this was so profuse that she was almost moribund when I reached her. I applied solid nitrate of silver over the entire granulating surface, carried a running suture around the edge of the wound and tied the ends of the ligature together. This proved effectual, and there has been no more bleeding. The fistula is now nearly closed, and the patient is walking about in a good degree of health.

Discussion.

Dr. Simon Marx said that from a gynæcological standpoint he

had had no experience, but from an obstetrical standpoint he had seen three cases, in which the amount of gauze was very small. In the first case, post-partem tamponade for hæmorrhage, with gauze in twenty-four hours. In this case very high temperature, and a pulse more rapid than the temperature would warrant. In the second case, about the same history. The third was a peculiar case, in hospital, in which he wished to manipulate and dilate an os for acute mania occurring during the puerperal state. In the preliminary step a very small amount of iodoform gauze was introduced in the vagina and cervix up to the internal os. The woman was thoroughly aseptic before the operation. Within twenty-four hours the most intense restlessness, with temperature of 100 and pulse of 140. Here was a case of undoubted iodoform poisoning in a puerperal woman who had not been confined, and where there were no lesions, and yet from the exposure of a small surface at the cervix with very weak iodoform gauze the woman presented severe symptoms of iodoform poisoning. The removal of the gauze caused an almost immediate cessation of the symptoms within twenty-four hours. He fears iodoform gauze so much in this practice that he has thrown it entirely aside.

Dr. von Ramdohr said he had had one experience of the same kind. In operating on an ectopic gestation there was such an amount of adhesions and bleeding from surfaces that he had to pack extremely tightly with about six square yards of iodoform gauze. The gauze was removed two days afterward. Later on it was packed more lightly, but on the seventh day there was a fistula communicating with the small intestine. This fistula healed by making a funnel-shaped dressing, keeping it tightly together in the same way as one would dress the rupture of the navel in an infant. There was no intoxication.

Dr. Malcolm McLean said that last winter he had a marked case of this trouble, in a woman who was very susceptible to poisons of all kinds. It was an undoubted case of intoxication from the packing, but he will not allude more fully to it now, as on looking up the literature on the subject of iodoform poisoning he made up his mind it ought to be thoroughly ventilated, and he is going to try to bring it up in such shape that it will receive attention.

Dr. Cragin said that it seemed hardly fair to set down this fistula as due to the gauze packing. In the first place, the pelvis was not firmly packed with it. In the second place, there had

been an inflammatory process, and an infiltration of the tissues. In the third place, if the hæmorrhage was so severe, that is, if there was a hæmatoma of that size, there would probably be more or less bruising of the tissues during the operation. It seems more probable that the fistula resulted from an injury to the intestine than from mere pressure of the iodoform gauze.

The President said that he was much interested in the subject. He has a patient to-day who had taken iodoform for a number of days, and there had not been the slightest symptom. In the peritoneal cavity we get absorption which we will not get anywhere else. It must be as Dr. McLean has said, that there are idiosyncrasies in regard to it.

Dr. Currier (in closing) said that he did not think there was an ectopic gestation in this case, because in treating the woman to arrest the hæmorrhage he saw the hæmorrhage proceeding from the granulating surface of the vaginal wound, and when it was burned down with nitrate of silver and the ends brought together there was no more bleeding.

Official Transactions.

A. M. Jacobus, *Recording Secretary.*

ABSTRACTS.

THE STATUS OF GYNÆCOLOGY ABROAD.

Restoration of the Vagina for Atresia.

A. MACKENRODT (*Centralbl. f. Gynäk.*, No. 20, 1896) maintains that complete congenital atresia of the vagina is not amenable to treatment in cases where the internal genitals are in such a condition of rudimentary development that no efforts at the performance of their functions are observable. But these cases of more or less complete absence of all genital organs are very rare. Even if the organs arising in the Müllerian ducts, oviducts, uterus and vagina, are completely wanting, the ovaries, or at least one of them, shows an evident development, and are sometimes surprisingly hypertrophied ; they also show a tendency, proved by numerous observations, toward further morbid degeneration. Besides, they are always the cause of serious periodical troubles, which could only be obviated by their removal, and this operation will readily be decided upon in view of the degenerative diseases otherwise to be feared. It can be a question of operative treatment for atresia vaginæ only in such cases where the uterus and oviducts, although rudimentary, are sufficiently developed to produce a menstrual secretion. In that case these secretions either flow through the open oviducts into the free abdominal cavity, when they are absorbed without reaction, or retention tumors are formed in the uterus or oviducts in case the latter are closed. It is not rare in vaginal atresia to find an uterus unicornis, and then two lateral, adjoining tumors can be felt, which consist of hæmatometra and hæmatosalpinx. In cases of atresia vaginæ, when a menstruating uterus can be made out, an attempt should be made to open the os uteri and thus allow and secure the discharge of the uterine secretions in a natural way. In cases of partial atresia good results have been obtained by pulling down and suturing the opened portio to the vaginal rudiment previously made patulous. But in cases where there was no vagina existing, or where a granulating canal had to be left between the short vaginal rudiment and the portio, so far the attempts to keep this canal open by means of tampons until a cicatricial covering of epithelium had formed, were very troublesome, and while favorable results were obtained

at first, they were followed later on by cicatricial stenosis and atresia. The most natural way of substituting the missing walls of the vagina is by transplantation of vaginal mucous membrane obtained in operations for prolapse upon an otherwise healthy woman. In the artificial formation of the vaginal canal it must be remembered that even in cases of total atresia, the vesico and recto-vaginal septa, composed of connective tissue, and acting as supports to the bladder and rectum, are always regularly developed. The greater number of atresias of the vagina, formerly looked upon as congenital, are now regarded as acquired, being the result of an inflammatory process in early youth ; consequently these two layers of connective tissue, which generally are separated by the vagina, are now closely adjoining each other, although easily separable. The separation of these two septa must be done very carefully, so as to avoid wounding either the rectum or bladder, and it is therefore most important, on making the opening incision between the labia, not to injure the septum nor to work ahead in a wrong direction with the finger. On reaching the os uteri, the future vaginal canal can easily be made sufficiently wide by drawing it apart with both indices. The os uteri will usually be stenosed and must be dilated. The newly formed vaginal canal must now be firmly packed with iodoform gauze, which packing must be changed every second day until healthy granulations appear everywhere. The next step will be the transplantation of the vaginal mucous membrane. This is best done at one sitting if it be possible to obtain sufficient mucous membrane, and the surplus material from a large prolapse is nearly always sufficient for the formation of a complete vagina. But if two sittings are necessary, the second must be delayed until the first transplantations are firmly healed. The preparation of the flaps to be transplanted require great care. The mucous membrane of the prolapse must be made aseptic, and with as little irritation as possible, and must be removed as smoothly and with as little contusion as is possible. The strips must not be too thick and should be immediately folded upon themselves, so that raw surface will be upon raw surface, thus excluding air and possible infection, and laid away in sterile dishes and kept warm until transplantation can be made immediately after finishing the colporrhaphy. If only single patches are to be transplanted, they must be trimmed to fit the sides of the canal and put on the aseptic granulating surface, previously carefully dried, and firmly pressed into place and retained

by tampons of iodoform gauze. They should be undisturbed for about ten days, while the patient is confined strictly to bed.

The transplantation at one sitting is not so simple. The patches should be sutured on a warm, aseptic, half-opened cusco speculum, with the epithelial surfaces inward in the form of a tube corresponding to the size of the proposed vagina. The patches may be as large as they can be obtained. The wound cavity is then extended widely, and the speculum with the new vagina is carefully introduced. The speculum is then partly withdrawn and the new vaginal canal firmly tamponed with long strips of iodoform gauze; this continued until the speculum is entirely withdrawn and the new vagina firmly pressed against the sides of the wound cavity, where it is to be left for eight to ten days. If one of the patches should become necrotic, another can be substituted at a later date. Two vaginas formed in this way have given very satisfactory results, even to the acquiring of sensation in a short time, and becoming almost indistinguishable from the natural vagina. (G. H. Mallett, New York.)

OBSTETRICS.

United States.

Fibroid Tumors of the Uterus Obstructing Delivery; Subsequent Disappearance of the Tumors.

G. H. Balleray, Paterson, N. J. (*Amer. Medico-Surgical Bul.*, August, 1896) reports six cases of labor complicated by fibroid tumors.

Case I.—Mrs. C. had had five children previously, with no trouble attending delivery. In March, 1896, she was in labor. Dr. Balleray found the os dilated and membranes ruptured. Head very high and far back. The abdomen was immense and the pains severe, but no progress was being made. The lower half of the uterus seemed more prominent than the upper and very hard. The patient was anæsthetized and forceps applied, but delivery could not be accomplished. Version was then performed with great difficulty and a living child delivered. The uterus remained large and hard. On introducing the hand into the uterus to remove the placenta, a fibroid tumor as large as an

adult head was found occupying the anterior and lateral walls. Little bleeding followed the removal of the placenta. The puerperium was uneventful and the patient was around the house in two weeks. A week after delivery the patient began to take twenty-drop doses of fluid extract of ergot three times daily. Six months later the tumor had entirely disappeared. The ergot was continued for several weeks.

Case II.—Dr. Balleray was called in consultation by Drs. Quin and Terriberry. Unsuccessful attempts to deliver with forceps had been made. The patient was feeble, with a pulse of 136. Abdomen very large and tender. The patient was etherized, and from the condition of the child's cranium it was undoubtedly dead. A large, hard mass was situated in front and below the head. Version and delivery were accomplished with much trouble. The uterus still remained as large as at six months of pregnancy. The patient's condition demanded immediate removal of the placenta, and this was done with slight hæmorrhage. A large tumor was located in the anterior uterine wall. The patient made a slow but complete recovery. Eight months later the patient reported that she had not menstruated for two months, and feared that she was pregnant. On examination no tumor could be found, and the uterus was of the normal size for a two months' pregnancy. The patient was delivered at full term without difficulty, and after the delivery of the placenta the uterus was of normal size and consistency.

Case III. was a primipara seen in consultation. Circumstances demanded craniotomy, and after delivery a fibroid tumor as large as a duck's egg was found standing out from the anterior uterine wall. Two years later the patient was attended in her second confinement. The labor was easy and after delivery no vestige of the tumor could be found.

Case IV. came to the writer's knowledge through Dr. Leal, who saw the case in consultation. The patient, a primipara, was delivered of a child and the placenta with little difficulty, but the size of the uterus afterward led to diagnosis of a fibroid tumor. Dr. Balleray hoped that the tumor would disappear during the process of involution, but four months later a large fibroid reaching two inches above the navel was present.

Case V.—Dr. Emmet relates a case in which he was called in consultation, and made a diagnosis of pregnancy complicated by a fibroid. This opinion was confirmed by Dr. Elliot. After de-

livery at term by Dr. Budd, no tumor was found, and the previous diagnosis was questioned by the patient.

Case VI. had been married three years and had never been pregnant. She had a fibroid tumor reaching above the umbilicus. As she had not menstruated for three months and the breasts presented characteristic changes, a diagnosis of three months' pregnancy was made. Two months later, during Dr. Balleray's absence, she was seen by another physician, who advised waiting two months longer before deciding on any measures. At the end of that time this doctor called on Dr. Balleray's colleague and stated that the fibroid had entirely disappeared. But when labor began the fibroid came to the front, opposing the descent of the head. It was decided to perform laparo-elytrotomy, and Dr. Balleray was again called. The patient's pulse was 120, but she did not seem much exhausted. The operation was performed and a still-born child delivered with considerable loss of blood. The woman died in thirty-six hours. Dr. Balleray had no opportunity to perform version or even to examine the patient, as the mode of operation had already been decided upon. Other cases might be cited, but the real cause of the disappearance of fibroids during or following pregnancy cannot be explained. As regards the treatment of labor complicated by large fibroids, podalic version and extraction, if possible, offer the best chances for both mother and child. And where operative procedure is absolutely necessary, Cæsarean section would be preferable to embryotomy.

Hyperemesis Gravidarum.

W. W. Holliday, Cleveland, O. (*Cleveland Med. Gaz.*, October, 1896), reports two cases bearing on this subject. The first was a lady of twenty-seven who gave a history of general malaise, some vomiting and continuous nausea for three or four days. Some nine months before she had aborted at the sixth week. Had always been irregular and scanty in menstruation, and had had attacks of vomiting. No family history of cancer or tuberculosis. It was six weeks since the last menstruation. Examination of uterus, cervix, and abdomen showed no changes indicating pregnancy. Slight pain in epigastric region and in back of neck, no tenderness of vertebræ. Bowels readily moved. Urine normal. Being suspicious of pregnancy, rest in bed with powders of calomel and bicarbonate sodium was ordered, with counter-irritation over the stomach. No relief was given, and bismuth subnitrate with car-

bolic acid in mucillaginis acaciæ and peppermint water was tried, but not retained. Bismuth and oxalate of cerium were tried with no benefit. She was sustained by peptonized milk enemas. Drop doses of wine of ipecac and Fowler's solution also failed. Another examination revealed no changes in uterus or cervix. Lavage was refused until after consultation with another doctor, when it was tried once a day for three days with no benefit. Strychnia was given hypodermically with morphine, and hydrochlorate of cocaine tablets were given by mouth. The patient failed in strength and a surgeon was called, who examined the patient thoroughly *except* the uterus under ether with negative conclusions. The death of the patient followed, and the post-mortem showed a pregnancy of three months. The growth must have been very rapid during the last few weeks. The writer says, "we have been told of some of the mistakes of Moses. We occasionally make them ourselves, and while it may not be pleasant or even fashionable to talk of them, it occurred to me it might be practical if we did it more."

The second case showed unmistakable signs of pregnancy, and remedies similar to those used in the preceding case were tried with no benefit. Copeland's plan of dilating the cervix after dipping the instrument in pure carbolic acid was tried, but failed to give relief. As there was erosion of the cervix a tampon saturated with a ten per cent. solution of ichthyol in glycerin was applied to the cervix. This was retained for four days, and complete freedom from nausea resulted. La Torre of Rome recommends a twenty per cent. solution of ichthyol in glycerin. Another writer has found that vesication over the fourth and fifth dorsal vertebræ gave relief. The necessity of not waiting until the patient is exhausted before operating is very apparent from all the literature of the subject.

France.

Twin Delivery: One Fœtus Anencephalous, the Other Normal.

Dr. Osmont (*Archives de gyn. et de toc.*, June, 1896) relates the case of a primipara at term aged twenty-seven years to whom he was called by a midwife; on arrival he found a living anencephalous fœtus delivered. A second fœtus was found in the uterus in the R. O. P. position. The cervix was but partly dilated. As the labor pains were feeble, after eight hours' delay he applied the forceps and delivered the second child with ease, which was a well-

formed living male, weighing seven pounds ; it survived thirty-six hours. The placenta was divided into two parts, each of which had separate amniotic sacs and umbilical cords. One of these sacs was a third smaller than the other, with a cord but ten inches long and laterally inserted. The other cord was twenty-seven inches long and centrally inserted. This division of the placenta was accomplished by a thin membranous bridge. The mother had suffered early in pregnancy from marked digestive and nervous troubles ; later from excessive abdominal enlargement and œdema of the lower extremities with cramps. There was no history of twin pregnancy in her family. The father of the children had twin brothers. Anencephali are very rare in double pregnancy. In the present instance it is probable that one fœtus developed at the expense of the other.

Cœliotomy in Deviations from Normal Parturition after Ventrofixation of the Uterus.

H. A. von Guerard, of Düsseldorf (*Centralbl. f. Gynäkol.*, May 16, 1896), was called to a tertiapara who had been twenty hours in labor and upon whom ventrofixation had been performed four years previously. The cervix was found to be fully dilated, the membranes ruptured, and the pelvis roomy. After two hours' delay, little progress having been made, forceps were applied and the child delivered, but slightly asphyxiated ; it was quickly resuscitated. A continuous flow of blood from the vagina followed the delivery which was at first unnoticed, attention being turned to the child. Compression of the uterus expelled the placenta with large clots. Hot vaginal douches and continued compression of the uterus were maintained, with no improvement. The uterus could be felt to contract at the fundus and then relax. It was impossible to grasp the uterus in its high position for massage. An attempt was made to ligate the uterine arteries, but it was impossible to do so on account of the elevated position of the uterus. Compression of the aorta was equally unsuccessful. Tamponing of the uterus was considered unwise, as the woman was very weak from loss of blood ; the fear being that the tampon would not excite uniform contractions of the uterus, owing to the firm adhesions existing between the uterus and the abdominal wall and the danger of inertia. The writer therefore decided to excise the cicatrix and thus free the uterus. The vagina was tamponed and the old abdominal scar incised ; on entering the peritoneal cavity the

omentum was found adherent to the uterus ; on the left side of the uterus a hæmatoma was met with which bled freely. The abdominal incision was further enlarged ; an assistant compressed the uterine vessels and drew the uterus out of the abdomen—as in Cæsarean section—a cicatricial wedge was excised from the uterine wall and the gap closed by silk sutures. The abdominal wall was closed with similar sutures. The uterus when freed from its adhesions promptly contracted, and the hæmorrhage ceased at once. The patient made a good recovery.

Germany.

Ovarian Pregnancy together with Normal Uterine Pregnancy: Laparotomy on the Fifth Day after Spontaneous Birth of the Uterine Fœtus.

H. Ludwig (*Wien. klin. Wochenschr.*, July 2, 1896) finds but eighteen recorded cases of true ovarian pregnancy ; many cases of ectopic gestation, as far back as 1682, are so called, but lack anatomical evidence. The first authentic case was that described in 1859 by Williglk ; then follow those of Walter, Leopold, Siegelberg, Patenko, Baur, Rumpff, Sanger, Kustner, Stratz, Herzfeld, Mackenrodt, Wyder, A. Martin (two), Gottschalk, Frank, and Geuer. All of which are authentic cases of ovarian pregnancy. The writer reports with great care a case in the clinic of Professor Chrobak, as follows : A sextipara, thirty-five years of age, whose previous parturitions had all been normal, was taken in labor at term, at her home in Sanbor (Galicia), and was delivered in six hours of a mature living female child. The midwife finding another child undelivered, called a physician, who extracted the placenta manually, and endeavored to reach and deliver the second child, which, though distinctly felt both through the thin abdominal wall and by vaginal touch, could not be grasped. He and an associate both agreed that the woman should either wait for the child to die and then submit to a laparotomy, or undergo the operation at once. The woman did not decide until the fifth day of her puerperium, when she made a trip of seventeen hours to Vienna and entered the clinic of the writer. She was admitted at eight A.M. February 26, 1896, with a temperature of 37.3 Centigrade, and a pulse of 92. On examination the abdomen was found irregularly distended and the fœtal movements very distinct. The uterus was found anteverted above the symphysis pubis and

about the size of a man's fist. Proceeding from the left uterine cornu a cord the size of a thumb was felt isolated for a short distance and then ending in a large soft tumor adjacent to the left border of the uterus and reaching to the left iliac fossa. A hard rounded tumor filled Douglas's *cul-de-sac*, which could be pushed upward and was recognized as a fœtal head resting with its greatest periphery in the brim of the pelvis. The diagnosis was made of extra-uterine pregnancy of the left appendage with a mature living child. At 8.45 A.M. of the same day laparotomy was performed. An incision was made eighteen centimetres long, having the umbilicus in its centre. An extremely thin bag of waters was seen passing over below to the left into the placenta, adjoining the whole left border of the uterus and apparently closely united with the same ; backward loosely adherent to some coils of small intestine but entirely free to the right and forward. To the left it was loosely adherent to the parietal peritoneum near the left ligamentum infundibulopelvicum. The detachment of the adhesions was easy. It was thought possible to lift the antigerminal pole together with uterus far enough out of the true pelvis, so that the formation of a pedicle would present no difficulties. Owing to the large size of the blood vessels supplying the fœtal sac and the uterus, the writer decided not to remove the sac separately from the uterus. On opening the fœtal sac, six hundred grammes of liquor amnii escaped and a well-developed male child, 49.5 centimetres long and weighing 3570 grammes was extracted, crying loudly. After division of the umbilical cord the uterus and the placenta were lifted out of the pelvis and an elastic ligature was applied just above the antigerminal pole around the uterus near the internal os. The uterus and the appendages were then excised.

The remnants of the placenta and fœtal membranes, remaining in the stump, were removed by scissors and the surface cauterized. The stump was treated extra-peritoneally. The patient lost no blood except that which was in the placenta and uterus. Convalescence was hindered by an attack of pneumonia ; the wound healed however quickly. The pathological report by Professor Kolisko is very complete. The chief points of interest are that the right appendages were found to be normal. The left appendages were absorbed in the fœtal sac ; over the anterior surface of the sac the ovaduct was stretched. At the upper circumference of the sac the ligamentum ovarii proprium was found, from one to one and a half centimetres wide, involved in the wall of the sac.

At the outer extremity of the ovaduct an ovarian fimbria extended to the fœtal sac ; recognized by its whitish color and superficial crenation as a remnant of the ovary, whose surface passed over all around into the wall of the fœtal sac, and corresponded to the exterior pole of the ovary. The fœtal sac itself consisted of a solid portion occupying the anterior periphery of its lower segment, and also of a membranous portion corresponding to the remaining circumference of the sac. The fœtal sac if filled would be equal to a body twice the size of a man's head. Its solid portion was formed by the placenta (eighteen centimetres long and twelve centimetres wide), reaching to the uterine border. The membranous portion of the fœtal sac was formed on the one hand by the fœtal membranes, and on the other hand by the highly attenuated ovarian surface. This latter condition is explained by the passing over of the true ovarian ligament on the one hand and of the exterior ovarian pole on the other into the wall of the fœtal sac, also by the presence of several small cysts the size of a millet seed ; evidently ovarian follicles.

The microscopical examination of the fœtal sac showed ovarian elements spread over the entire surface. Germinal epithelium, two corpora fibrosa, and a large number of follicles were found in the sac. According to Spiegelberg the diagnosis of ovarian gestation demands :

1. The absence of the ovary on one side.
2. Ovarian elements in the wall of the sac.
3. Communication of the fœtal sac with the uterus by the ovarian ligament.
4. Non-participation of the ovaduct in the formation of the fœtal sac.

Veit demands as proof

1. That both ovaducts and one ovary do not take part.
2. That the second ovary is absent or forms a part of the wall of the fœtal sac.
3. That the ovarian ligament passes over into the sac.

All these conditions are fulfilled in this case.

The fact that the extra-uterine fœtus was carried to maturity is not exceptional. Herzfeld operated shortly after the death of the mature fœtus. Walter observed the death of the mature fœtus on the two hundred and eightieth day of pregnancy. Gottschalk noted the death of an extra-uterine fœtus at the termination of full gestation. Leopold's case was carried to full term. Spiegelberg

extracted the first living mature child, proceeding from ovarian gestation, by laparotomy ; the mother died. The case of the writer's is the first in which both mother and child were saved. Laparotomies performed near the end of gestation with living extra-uterine child are no longer rare. Werth reported from 1880 to 1886 eight cases, of which one mother only recovered. In 1890 nine more cases, of which seven recovered. Werth holds that it is better to operate at once with a living fœtus than to wait for its death. Herzfeld's case and that of the writer shows that it is possible to obtain good results by waiting for viability, or even maturity. The chances, however, are great as shown by the statistics of Orillard and Werder. The former collected sixty cases of viable extra-uterine fœtuses. Of thirty mothers, twenty were saved during the last ten years. And only eight of the other thirty lived. Of sixty-one viable children, twenty-seven survived ; twenty-six died within forty-eight hours ; eight lived a little longer. Concerning the simultaneous occurrence of intra and extra-uterine gestation, H. Gutzwiller has collected eighteen cases. Of these eight mothers recovered, six after laparotomy, two by absorption of the extra-uterine fœtus. The other ten women died of hæmorrhage, sepsis, or of both.

The results for the fœtuses were :

(*a*) Four cases in which the intra-uterine fœtus was delivered per vaginam ; the extra-uterine one died or was extracted by laparotomy.

Two cases in which both fœtuses were dead, or the sac ruptured, causing the death of the mother.

Three cases, with two mature dead fœtuses.

(*b*) One case. The extra-uterine fœtus extracted by laparotomy, thus disclosing the intra-uterine gravidity.

(*c*) One case. The extra-uterine fœtus dies, the intra-uterine fœtus carried to term and born alive ; the extra-uterine expelled later by excision through the rectum.

(*d*) One case. The extra-uterine fœtus extracted by laparotomy and the intra-uterine fœtus expelled shortly afterward.

(*e*) One case. Both fœtuses were carried to term, laparotomy was performed, the extra-uterine fœtus removed and afterward the intra-uterine fœtus extracted by hysterotomy. The mother died on the fourth day.

All the other extra-uterine fœtuses were dead ; six of the intra-uterine fœtuses survived.

Schröder, Kleinwächter, Browne and Parry give the results of thirty-eight cases of simultaneous extra and intra-uterine gestation. Twice both fœtuses reached term. Of the extra-uterine fœtuses, *none* survived. Of twenty-four intra-uterine ones only seven lived. Therefore the writer's case is the only one recorded with favorable result for the mother and both mature children.

On Statistics of Disease in Lying-in Hospitals.

H. Fehling (*Deutsch. Med. Woch.*, July 2, 1896) concedes to Ahlfeld the credit of urging discussion concerning the causes of the great variation in the occurrence of puerperal temperature in lying-in hospitals; this varies from nine to fifty-four per cent. But he criticises a recent paper of the latter for omitting from his lists of comparison certain diseases. Every woman, he says, should be considered diseased whose axillary temperature exceeds 38° Centigrade even once. Ahlfeld's tables are:

Wurzburg, 1889–94	9.03	per cent.
Vienna, at the midwife clinic, 1894	6.25	"
Leipzig, 1891–94	31.05	"
Jena, 1891–92	23.15	"
Marburg, 1891–95	38.03	"

Ahlfeld lays stress on the importance of care in the selection of the attendant who makes the thermal observation. This the writer endorses, and cites check tests instituted by him, proving the inaccuracy of expert midwives. Also the necessity of comparing thermometers with a standard yearly. He further says that the febrile statistics of clinics in the larger cities are increased by the fact that parturient women are admitted with fever already existing. In Halle, gonorrhœa contributes largely to febrile disturbances in the puerperium. Ahlfeld found in one hundred parturient women, not examined vaginally, fever in thirty-nine per cent during the puerperium. In this list he includes cases of perineal laceration, with repair. Chrobak reported at Vienna that, in his experience, disease increased in proportion to the frequency of the examinations made in parturition. At the Dresden clinic, of the unexamined cases, only 1.6 per cent, and, later on, only 0.65 per cent. were feverish. But of the examined cases eight to twenty per cent. were feverish. Fehling fails to see how Ahlfeld can ignore these facts and assert that the insignificant fevers of well-conducted clinics are in the minority due to infection. Ahl-

feld attaches great value to prophylactic douching of the vagina, and ascribes the high febrile percentage in his clinic during the years of 1891 and 1892 of 49.5 per cent. and 45.5 per cent. to the omission of this proceeding; while Leopold reports that of 4584 parturients on whom this method had been practised, 19.21 per cent had fever; and of 3681 cases in whom this proceeding had been omitted, only 8.42 per cent had fever. Bischoff, like Kaltenbach, was a strong advocate of prophylactic douchings. During his directorate in Bâsle all parturients both before and during parturition were subjected to this treatment. The results were for the years 1868–1886, a percentage of febrile cases ranging from 30.17 to 56.44 per cent.

The writer, who followed Bischoff at Bâsle, abandoned this treatment, and gives as a result, for the years 1887–93, a percentage of fever cases of 15.2 to 21.5 per cent., averaging 19.2 per cent. with increased vaginal examinations. Kaltenbach, while at Halle, in seven years, had a fever record averaging 24.3 per cent., while the writer, who followed him, discarding douching, had an average in four years of 15.5 per cent. of fever cases. The results obtained at Bâsle and Halle show as clearly as those at Dresden, under Leopold's direction, the correctness of the investigations of Kronig and Menge, that antiseptics injure the normal chemism of the vaginal mucous membrane, and so lowers its germicidal power. Except in septic and gonorrhœal cases he protests against vaginal douching as a prophylactic measure.

Australia.

Extra-Uterine Pregnancy.

David Hardie, of Brisbane (*The Australasian Med. Gazette*, July, 1896), reports the following case in which he was first consulted, January 2, 1896, by the patient, who gave the following history: She had been married fifteen years, had two children, the youngest nine years old; had a miscarriage eighteen months before consultation. Menstruation always regular, lasting from nine to ten days. In June she went a week over time when the discharge appeared, lasting fourteen days and containing small clots and a fragment "resembling skin." In the beginning of July the menses reappeared for a few hours, returning a week later, and so on at short intervals until the middle of September, at which time she passed shreds having a putrid odor She was seized with

cramping pain near the navel with vomiting and cold sweat, temperature 104°, and a hard pulse. It was thought a miscarriage had occurred. For three months she was confined to bed with attacks of pain occurring at irregular intervals. In December she called Dr. Hill's attention to a hard lump in the region of the bladder. A large central tumor, reaching nearly to the umbilicus, was found. Dr. Hardie was called in consultation at this time. Fœtal movements could be felt through the abdomen, but no fœtal heart sounds. Vaginal examination revealed a patulous os, but on pressure being made over the abdomen a distinct sulcus could be felt between the body of the uterus and the fœtal head. Probable extra-uterine pregnancy was the diagnosis. During the next few weeks there was a vaginal discharge, at first watery, afterward bloody, together with severe cramps at the left of the navel lasting three or four minutes. The abdominal enlargement increased, but occupied the left lateral region ; a swelling behind the cervix could also be felt. On further consultation with Dr. Byrne a sound was introduced into the uterus to the depth of three inches, showing beyond a doubt that the pregnancy was extra-uterine. The cramping pains became more frequent and intense, and it is of interest to note that during these pains the fœtal sac would harden somewhat under the hand. In view of the danger to mother and child from possible rupture, an operation was decided upon and performed on February 26. An incision five inches long and one and three quarter inches to the left of the median line was made. The sac being opened, a well-formed female child, apparently about the eighth month, was carefully extracted and lived for six hours. There was no liquor amnii. The cord was tied and dropped into the cavity. The placenta was seen at the right of the incision, extending upward nearly to the umbilicus, and downward to the left anterior surface of the uterus, from which it undoubtedly received its blood supply. Its removal was not attempted. Further examination showed the left Fallopian tube lying back on the omentum on a line with the umbilicus. its lumen enlarged and its walls hard and greatly hypertrophied. The pregnancy was evidently tubal in origin, primary rupture having occurred during the third month, while further development had taken place between the layers of the broad ligament, the anterior and posterior layers of which constituted the sac proper with the tube for its upper inner boundary. The tube was firmly attached by silkworm gut near the middle of the

abdominal incision and the edges of the sac were sutured to the sides of the wound with much difficulty on account of their delicate nature, one vertical tear to the left being made in spite of care. It was hoped that lymph would be thrown out in sufficient quantity to obliterate this opening before the placenta became septic. A gauze drain was inserted deeply and loosely into the sac. The entire operation was completed with the loss of probably not more than half an ounce of blood. The first twelve days everything progressed favorably, but at the end of that period persistent vomiting began, with some distention of the abdomen. For two days she was kept on nutrient enemata ; then the vomiting having ceased, a purge was given. The sac was also irrigated very gently with warm boracic acid solution, and this was continued daily. About the sixth week the placenta began to come away in pieces, and by April 17th all had been discharged ; steady healing of the wound followed. The writer thinks that recovery would have been quicker if the gauze drain had been removed twenty-four hours after the operation and the wound closed. If sepsis had arisen the sac could have been opened. The literature of this subject shows that this was one of a small number of operations performed with the child living.

(T. W. Cleaveland, New York.)

PÆDIATRICS.

United States.

A Case of Precocious Menstruation.

J. W. Irion (*New York Medical Journal*, August 15, 1896) reports the following case of a healthy female child born October 10, 1895. On the seventh day a bloody vaginal discharge was observed which lasted without other symptoms for four days. In December the flow did not occur, but the child suffered from the usual adult symptoms of suppression, and eczema broke out over the entire body. The suppression was attributed by the mother to a cold bath. Since December the flow has been regular and the child's health excellent. The mons veneris and breasts are considerably developed, the latter enlarging and becoming somewhat sensitive during the flow. The mother is a healthy German woman

with one previous child, a vigorous boy. She herself began to menstruate at the age of thirteen years.

A Case of Gonorrhœa with Double Epididymitis in a Boy Twelve Years of Age.

E. S. Cox (*Ibid.*) reports the following: L. M., twelve years old, when first seen, presented an inflamed and swollen penis, enlarged lymphatics, and immensely swollen testicles; he had intense pain in the inguinal region, dysuria, constipation, and a temperature of 102° F. The discharge had almost ceased with the onset of epididymitis, but, as the latter subsided, it increased. The history was clear and connected, and the case yielded to the ordinary treatment.

Report of a Case of Tracheotomy in a Child Aged Thirty-eight Days.

Lewis N. Anderson (*Archives of Pædiatrics*, August, 1896) reports as follows: C. D., aged thirty-eight days, previously healthy, showed a sudden disinclination to nurse, finally refusing altogether. When first seen, a few hours later, the child's breathing was difficult, and accompanied with a crowing sound; the eyes were rolled up, there was some cyanosis, and the epiglottis was swollen; no membrane was discoverable. The usual measures, steam, poultices and ipecac, failed, the child grew rapidly worse and ceased to breathe. Artificial respiration was unsuccessful, and, the child being almost pulseless, tracheotomy was performed immediately, followed by artificial respiration and stimulation. Breathing became easy, but after a short time there was an intermission of every fourth or fifth inspiration; this condition lasted for five days. In a week the infant could breathe somewhat through the mouth, but the final removal of the tube, fifty-two days after the operation, was possible only after gradually accustoming the child to its absence by temporary removals. The free secretion of mucus, partially controlled by belladonna, necessitated much cleaning of the tube.

Though laryngoscopic examination was impossible there was no evidence anywhere of diphtheritic inflammation nor of a foreign body. Judging from the symptoms and from the swelling of the epiglottis the condition was probably an œdematous laryngitis, due to a sudden change in the weather. The after history of the case has been good; three months later the child passed successfully through an attack of measles followed by mild bronchopneumonia.

Five Hundred Cases of Intubation of the Larynx.

F. E. Waxham (*Ibid.*) reports as follows :

Age.	No. Cases.	Recoveries.	Percentage.
Under 1 year	15	4	26.66
1 "	76	16	21.05
2 years	97	35	36.08
3 "	114	43	37.89
4 "	104	41	39.42
5 "	50	21	42.00
6 "	28	8	28.57
7 "	36	11	30.55
8 "	17	11	64.70
9 "	8	3	37.50
10 "	9	4	33.33
11 "	1	1	100.00
12 "	5	0	.00
13 "	2	0	.00
14 "	1	0	.00
17 "	1	0	.00
20 "	1	0	.00
36 "	1	1	100.00
43 "	1	0	.00
60 "	1	0	.00
	503	178	35.38

The author believes in the early use of antitoxin in all cases of laryngeal diphtheria, having saved 66 per cent. of those cases operated upon where antitoxin had been administered.

Tylosis Palmæ et Plantæ : with the Description of Two Cases, Mother and Daughter.

J. W. Ballantyne and G. Elder (*Pædiatrics*, Reprint) report the case of a girl, eight years old, who showed a callosity of the palms and soles, more marked in the former. It was most noticeable on the hypothenar eminences, but was present over the entire palmar aspect of the hand and fingers save at the flexures ; it did not extend to the dorsal aspect nor upon the wrist. Upon the feet the callosity did not reach beyond the soles, where it was most marked along the lines of pressure. The condition had been present since the child began to walk freely ; it was never absent, though aggravated by friction ; at times "peeling" occurred, but the skin beneath never appeared normal. The child had had a

good many warts, but showed no other abnormality of the skin or of its appendages. The hereditary history was interesting: neither the father nor any of his family had been so affected; but on the maternal side, the mother, one of two aunts, the great-grandmother and the great-grandmother's sister had presented this peculiarity. As treatment, a solution of salicylic acid in ether (ten grains to the ounce) has been used with considerable benefit.

The influence of heredity in these cases is most striking. Sometimes the transmission is through males only, sometimes through females only, and sometimes through the males of one generation and the females of another. Males are more frequently affected than females. It seems that at least the predisposition to the disease is always congenital, though some irritation may be necessary for its development. In a few cases the hyperkeratosis has not been limited to the palms and soles; two have been complicated by more or less ichthyosis.

The case reported may be regarded as typical in symptomatology of the minor degrees of the malady. In marked cases the epidermis may be divided by fissures into many irregular areas. There is usually no pain, but sometimes itching; sensations of touch, pain, heat and cold are generally much diminished. The thickness of the horny layer varies from one sixteenth to one half inch; beneath this layer the papillæ may be increased to five times their usual length; about the affected area there is often an erythematous zone which shades gradually into the neighboring skin.

As regards pathogenesis, Unna considers the disease an acanthosis; others have thought it allied to ichthyosis; it is at least certain that it is closely related to fœtal ichthyosis. The predisposition is no doubt congenital, probably connected with some unusual state of the epitrichium, not as yet understood. It is however interesting to note that the ingestion of arsenic has been followed by an exactly similar condition, though possibly in these cases there may have been a predisposition. As treatment, glycerin followed by pumice-stone, salicylic acid in ether, ichthyol, diachylon ointment, and arsenic with the use of tar ointment and of cork soles have all been recommended.

Great Britain.

A Case of Fatal Pelvic Injury in a Child.

Herbert W. Page (*Brit. Med. Jour.*, July 18, 1896) lectures on the case of a boy, seven years old, who was brought into the hos-

pital in a state of collapse, having been run over by a vehicle. It appeared that the wheel had passed upward over the right leg and thigh. Blood was trickling from the urethra, and a catheter was twice passed, as was believed, into the bladder, blood being withdrawn each time. It was therefore supposed that a laceration of the kidney had been sustained. The boy rallied from the shock, but in the middle of the night, the bladder appearing to be distended up to the umbilicus, an unsuccessful attempt was made to pass the catheter again. It was then supposed that the bladder must be filled with blood clot, which of course necessitated immediate washing ; an aspirator, then a trocar and canula, and at last a metal catheter were entered above the pubes, the clot broken up and washed out. After this no further bleeding occurred and the urine drained continuously from the suprapubic wound ; but the child steadily failed, he became restless, his temperature rose and he died in a state of collapse Too late for operation, it was concluded that there must have been some coincident injury to the intestines without many resulting local symptoms.

The post-mortem showed the kidneys, peritoneum and intestines intact ; the pelvis was found, however, to be fractured in three places, one fragment having torn across the urethra and punctured the rectum ; this laceration by displacement of bone is somewhat rare. What had occurred, then, was this : there had been an effusion of blood into the prævesical space of Retzius, which had leaked a little through the ruptured urethra ; it was into this space that the catheter had been passed, and this effusion that had simulated a distended bladder, and been removed by washing ; and it was in this space that the urine escaping underwent decomposition.

Australia.

Cerebral Collapse in Children.

Angel Money (*Australasian Med. Gaz.*, August 20, 1896) describes the case of a male child, aged twenty two months, who had been feverish and cross for a week and had had convulsions for two days. The T. P. R. was 102.2—120—30. The knee jerks were exaggerated, particularly on the left side, while the convulsions had been more marked on the right side. A very transient bilateral *tache cerebrale* could be obtained. Most marked was an extreme apathy, which was not however an actual unconsciousness.

In syphilitic children this cerebral collapse is often of long

duration. The author has not found it common after acute febrile disease. We can only say that the condition seems to depend in part on a de-energization of the cells and fibres of the cerebral cortex. It may partake of the nature of acute melancholia.

British India.

On the Early Recognition of Hypermetropia and the Prevention of Squints in Children.

B. H. Nanavatty, Ahmedabad (*Indian Medico-Chirurgical Review*, June, 1896), says that many children whose eyesight has previously appeared normal are found upon beginning school to suffer after short periods of study from pain in the eyes and perhaps in the head. This causes a disinclination for books that is often misinterpreted; the child is forced to study, and additional troubles arise, such as lachrymation, increased pain, redness and soreness of the eyes and dimness of vision and squinting. The cause of these symptoms is usually hypermetropia. In the hypermetropic eye, the lens being flattened, accommodation is necessary to bring the parallel rays of light from distant objects to a focus upon the retina instead of behind it. Thus the eye, even in looking at distant objects, is not at rest; just so much greater then must be the effort when the ciliary muscle is compelled to accommodate such an eye to near objects. This results in the symptoms cited. A child thus affected may sometimes be observed to hold his book nearer and nearer to his eyes; this is because the ciliary muscle comes to be in a state of tonic spasm, thus overcontracting and causing the rays to converge in front of the retina, and inducing an apparent myopia; this frequently leads to an erroneous diagnosis. Regarding the squint, we know that normally there is harmony between the degree of accommodation and that of convergence, the ciliary muscle and the internal recti being supplied by the same nerve. The impulse from the brain to the ciliary muscle being exaggerated, so also is that to the recti; convergence is thus too great, the patient cannot see with both eyes, and one or the other eye is consequently directed inward; and this squint, from being occasional, becomes permanent. All these symptoms may of course be easily prevented by fitting to the eyes convex glasses of sufficient strength to enable the lens without undue effort to bring parallel rays to a focus on the retina. Still much more important is it that the remedy should be applied once the child has begun to squint.

(A. D. Chaffee, New York.)

NEW INSTRUMENT.

A New Leg Supporter.

The author, Victor E. Neesen, M.D., house surgeon at the Woman's Hospital, thus describes his device :

" In designing a new leg supporter I lay upon myself the incumbency of explaining why the leg holders which are now in use are not good enough.

" To my mind, there are two objections to most leg holders—viz. (1) they are not firm enough, and (2) they are in the way. I strove to eliminate these objectionable features when thinking out the instrument to be described.

" The apparatus, or rather each half of it, consists of a steel rod, nickel plated, about three feet long, a transverse rod eight inches long coming off at right angles to the top. At the angle is fastened a double strap adjustable by means of a screw, and at the end of the cross rod are two buckles, also adjustable. To attach it to a table a vise is used such as depicted. On the Neesen table there is a sliding track into which the vise fits, and a screw fastens it. Thus the vise moves backward or forward and the rod upward and downward, so that perfect adjustment is secured.

" The cross rod is intended to go under the patient's knees. One strap goes over the anterior aspect of the leg and the other just above the knee. Thus the leg is held firmly in whatever position it is placed.

" One objection has been raised—viz., that after prolonged operations temporary paralysis may result from pressure of the rod in the flexure of the knee. To refute this I might say that after an extensive trial in the Woman's Hospital, not one case has had any symptoms referable to pressure from the rod under the knee.

' I might add that in most cases the forward strap, the one going over the leg, may be dispensed with, the thigh strap holding the knee on the rod quite firmly."

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A METHOD OF UNTYING THE KNOTS OF SILK LIGATURES.*

By Herman Grad, M.D.,

House Surgeon, Woman's Hospital, New York.

Through the courtesy of Dr. J. D. Emmet I am here this evening to demonstrate to the members of this Society a *method of untying the knots of a silk ligature.* By eliciting a free discussion, and gaining an expression of the eminent opinions of the gentlemen present as to the practical utility of this device, I shall feel amply rewarded.

I take the liberty of proceeding by first making a few remarks regarding silk ligatures. In hysterectomies, if silk ligatures are employed for tying the vessels and broad ligaments, their free ends are brought down into the vagina. To remove these ligatures at a later period is often found to be a difficult task, the usual practice being to make traction on them from time to time to aid in their removal. This procedure, while not difficult, is disagreeable to the patients, on account of the pain caused, which often persists for hours afterward. While with proper care these ligatures can be kept comparatively clean, in the large majority of cases they become infected, and giving rise to suppuration, slough away. This process occupies from a few weeks to as many months, and in some cases when sloughing and traction do not free the ligatures, their removal must be effected by cutting their loops. Again, infected silk ligatures are often a direct cause of

* Read, by invitation, before the New York Obstetrical Society, December 1, 1896.

sinuses, and if these make their appearance in the abdominal wall, the road is paved for the occurrence of subsequent herniæ. To relieve the inconvenience and suffering which these deplorable conditions occasion, secondary operations are necessitated.

To obviate such sequelæ, the early removal of silk ligatures is sought. Dr. Clement Cleveland is the pioneer in successfully effecting this. His ingenious device for removing silk ligatures by burning their loops, as early as forty-eight hours after operation, is well known. To effect this same object—namely, early removal—I have tried to find a method whereby the knots of a silk ligature could be untied. My first idea was to use the bow knot or some suitable modification. I abandoned these on account of their insecurity. The manipulations, however, of the various forms of knots, led me to the idea of untying the reef and granny knots, just as this is occasionally effected with the aid of a tenaculum. I took a piece of string, made a knot, and included in this knot another piece of string, as a substitute for the tenaculum. By pulling forward and backward on this included piece of string, I could untie the knot, no matter how firmly it was tightened. In this manner originated the idea of my ligature, which I shall now describe.

The ligature consists of two parts: first, the ligature proper, with one end knotted for ready identification, and, second, the so-called *traction strings*. *A traction string* is made of a piece of braided silk, preferably No. 13, about twenty inches long, the two ends of which are tied together. Their name, *traction strings*, suggests their use. These strings are designated as 1, 2, and 3 by their corresponding number of knots. They are included into each knot of the ligature at the time it is tied, and when subsequently drawn upon untie the knots.

Application of the Traction Strings.

When the operator is ready to tie off the pedicle, he slips over the knotted end of the ligature *traction string* No. 3, and ties a single or a double knot as he prefers. The surgeon then takes *traction string* No. 2, slips it over the knotted end of the ligature, and ties a second knot. For additional security a third knot is tied in the ligature, *traction string* No. 1 having previously been applied over the knotted end of the ligature. The knotted end of the ligature is now cut short and the three *traction strings* with the remaining long end of the ligature are tied together with a piece of fine

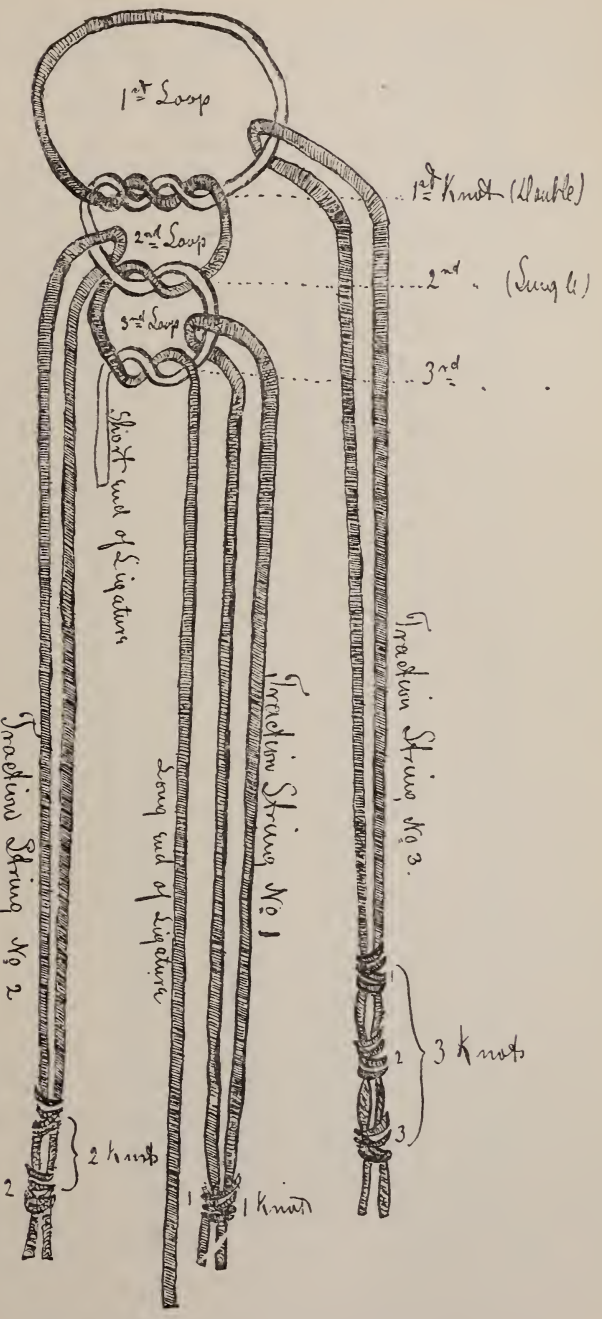


FIG. 1.—THE GRAD LIGATURE. TRACTION STRINGS IN POSITION.

silk. At the completion of the operation these separate bundles of *traction strings* and ligatures are brought down into the vagina and serve also as drainage.

Removal of the Ligatures.

If the *traction strings* have been properly applied their subsequent removal and that of the ligature can easily be effected. The patient is placed in the lithotomy position, the bundles of *traction strings* and ligatures are pulled out of the vagina, each bundle is separated from that of its fellow and the thread binding the bundle selected is cut, thus releasing all the factors of each bundle (*i.e.*, *traction strings* and long end of ligature). *Traction string* No. 1 is now picked up, and a slow but steady traction is made on one half of it, until it is felt to move out of its position. The opposite half of the *traction string* is now pulled on until the string returns to its former position. After making this forward and backward motion two or three times the *traction string* suddenly comes away, and the first knot (*i.e.*, the last one tied) is untied. The same manœuvres are repeated with *traction strings* Nos. 2 and 3. All the knots are now untied, and the ligature itself only remains. A slight pull will suffice to remove this, and the ligature is out of the way. Each bundle of ligatures and their *traction strings* are treated in the same manner until all the bundles are removed. An antiseptic douche follows, and the patient is returned to her original position in bed without having suffered material discomfort.

I am greatly indebted to Drs. Thomas Addis Emmet, Clement Cleveland, and P. F. Chambers for their kindness in giving my device a fair trial, and wish publicly to express at this time my thanks and obligations to them. I also sincerely thank the society for their kindness in permitting me to read this paper.

I append the following clinical notes :

Case I.—Miss A., aged forty-three.

Diagnosis : Multiple fibroma uteri.

Abdominal hysterectomy, November 16, by Dr. Clement Cleveland ; four ligatures employed. November 21, five days after operation, all ligatures removed by Dr. Clement Cleveland.

Case II.—Mrs. M., aged thirty-eight.

Diagnosis : Malignant disease of uterus.

Vaginal hysterectomy, November 17, by Dr. Thomas Addis Emmet ; eight ligatures employed ; November 19, forty-eight hours after operation, the first ligature removed by Dr. Thomas

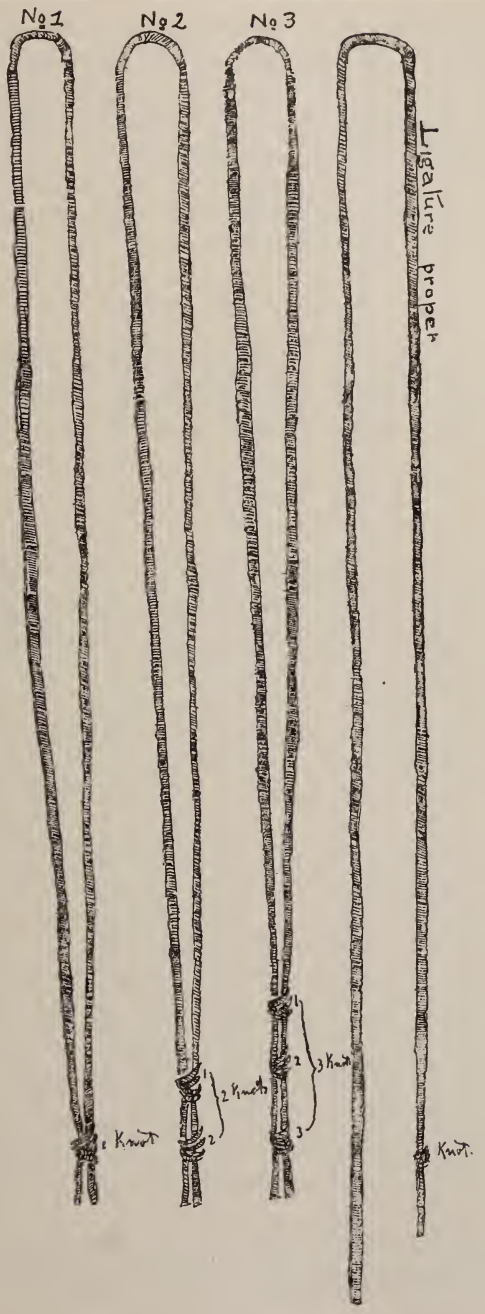


FIG. 2.—THE GRAD LIGATURE. TRACTION STRINGS.

Addis Emmet ; November 21, two ligatures removed ; November 22, four ligatures removed ; November 25, the last one, removed.

Case III.—Vaginal hysterectomy for fibroma uteri by Dr. P. F. Chambers on November 21 ; seven ligatures employed ; four days later, November 24, all ligatures removed.

Case IV.—Abdominal hysterectomy for diseased annexa by Dr. P. F. Chambers on November 28 ; four ligatures employed. These ligatures are still in position.*

TO WHAT EXTENT CAN WE DO CONSERVATIVE SURGERY UPON THE UTERINE APPENDAGES WITH SAFETY TO THE PATIENT ?†

By A. Palmer Dudley, M.D.,

Surgeon to the Harlem Hospital, New York.

That the title of my paper is of more than passing interest to me will be made manifest to you, when I confess that I have long entertained a desire (with proof enough from my own experience to make good the truth of my statement) to be able to declare that many ovaries and tubes I have seen removed in the past, and, in fact, many that I had myself removed, could have been saved and restored to usefulness and health for the possessor of the same. I know that I shall be criticised for the stand I am about to take, and possibly evidence may be brought forward to show that I am laboring under a delusion, and what has appeared to be, in my experience, a proper cure, has resulted only in a temporary benefit. Nevertheless, I feel that such experience as I have had should be given to you for criticism and placed upon record, as evidence of what can be done as conservative work upon the uterine appendages. When Batty's operation was given to the profession, I was not a worker in the field of gynæcology ; but if I am not mistaken, it soon met with favor, and many looked upon it as a panacea for all the ills within a woman's pelvis. Tait's work—in this country especially—seemed to fire the profession with a desire to spay all the women they could find, who suffered with pelvic dis-

* Since the presentation of this paper the ligature has been used in five other cases of hysterectomy, and the sutures were all easily removed.—Author.

† Read before the Woman's Hospital Society, December 8, 1896.

ease ; and shortly after I left the Woman's Hospital in 1881, I heard one professional gentleman declare that, in preference to all other work, he was going into the ovary business, for there was the most money. How well he has kept his word, the records could show, and the women of this country could testify to, could they be reached. The more I saw the removal and display of what appeared to me to be fairly healthy ovaries and tubes, the more I became convinced (as I watched the result in my own cases, and had some of them return to me, with many regrets that they had ever undergone the operation, and a declaration that the reflex symptoms resulting from it were more troublesome to them than that for which they originally came to me) that effort must be made to relieve their suffering, and if possible to restore them to health without depriving them of their menstrual function ; and what my experience has since been I give to you for what it is worth. I shall not take up your time, or attempt to convince you by any long-drawn-out discourse upon theoretical points, that would justify my action—for the best evidence for, or against, a theory or procedure is the results obtained from the application of it. Having determined that I would make the effort to treat the diseased ovaries successfully, I embraced the first opportunity to make the trial, and on October 18, 1887, did the first work, of which I make the subject of my paper to-night. The result of that work was so satisfactory that it gave me food for thought and study, and encouraged me to continue. The following is a short history of her case.

Miss K., aged twenty-one, American, matured at fourteen years, regular, changes lasting three days, always accompanied by cramp pains across the abdomen, which continued from one to two days. She had been under my care for one year, for relief from profuse leucorrhœa, tenderness in the pelvis, and the pain I mentioned at menstruation. She had become discouraged, having received no relief during this time from the pain in her left side, or during her menstrual period. She then consented to operation, and I placed her in St. Elizabeth's Hospital, where, on October 18, 1887, laparotomy was made, and the following condition found. Pyosalpinx on left side, pelvic adhesions all about right tube, ovaries buried up in adhesions. Adhesions broken up, and the left pyosalpinx and ovary removed. The right ovary and tube, although they were both in a dilapidated condition, were allowed to remain, I having pledged the patient that, if possible, her ovaries

should not be removed. She recovered without trouble, but I did not for a moment anticipate that she would be free entirely from her local trouble. To my surprise, however, she regained perfect health, and her following menstrual periods were unattended by suffering. She drifted from my observation, and I saw no more of her for several years, when one day, the exact date of which I cannot mention, but which the records of the Post Graduate Hospital would show, she appeared at my office, suffering from a mild, continuous hæmorrhage from the uterus. She had come down from Rockland Lake to be delivered, as she supposed, of a dead fœtus, thinking that the hæmorrhage indicated approaching delivery, and that her child must be dead. She had married a year previous, and was, at the time I examined her, about four months pregnant. I at once sent her to the Post Graduate Hospital, where she was put to bed and kept for two weeks ; some luke-warm astringent douches were given, and the hæmorrhage checked. She then returned home, and I have since learned carried her child to full term. I have introduced the subsequent history of this patient at this point, in preference to narrating the results upon other cases which I did previous to her return, but it was the rapid recovery, her freedom from pain and the good behavior of the dilapidated tube and ovary which I allowed to remain, that led me to believe that I could venture to do still more with the diseased appendages, if I could prevent occurrence of peritonitis ; but I was at the time a novice in laparotomy work (her case being my twenty-fourth), and the opportunity was not given me as frequently as at present to study the results in such cases ; and I did not meet with a suitable one for further experiment upon the ovary until December 6, 1889, when the following case came into my hands :

Mrs. S., German, aged twenty-five, married five years, mother of two children, and sufferer from one miscarriage two and a half years previous, was admitted to the Post Graduate Hospital in the first week in December, 1889, and reported herself a constant sufferer since her miscarriage. Her pain, which was always present, being increased at time of menstruation, and that, with the excessive flow, obliging her to remain in bed at least five days out of every month. Having to do her own housework and care for her two children, she was willing and anxious to accept any method of treatment that would relieve her from this monthly confinement, but begged if possible to save her ovaries. Physical exami-

nation showed the uterus to be completely retroverted, both appendages down with it, and all firmly fixed by adhesions. Laparotomy was made, the adhesions broken up, ovaries brought into view, and found to be full of cysts. These were evacuated with a large spear-pointed needle, and the capsule of each scratched and allowed to bleed itself full of blood. Every cyst that could be reached in both ovaries was evacuated, and in accomplishing this each ovary was pierced through and through several times. All of the interovarian pressure was relieved. Each ovary was then packed about with very hot sponges, and compression kept upon them until all bleeding from the punctures had ceased ; they were then allowed to drop back into the pelvis. The tubes were probed with a fine silver wire probe, found to be patent and allowed to remain. The anterior surface of the fundus of the uterus was then denuded slightly, the round ligaments brought up, folded upon themselves, and stitched to the anterior surface of the fundus of the uterus with over and over catgut suture. This was a piece of work that, aside from the breaking up of adhesions, was wholly experimental with the patient, insomuch as it was simply chancing a repetition of her monthly pain and confinement to bed, even though she recovered from the operation without inflammation of the ovarian structure which had been so thoroughly punctured. The result, however, was more than satisfactory ; she convalesced without a particle of trouble, having no pain following the work done, the uterus being well anteverted and perfectly movable ; she left the hospital in three weeks' time a different woman. She revisited the clinic every week, and reported the next two changes as perfectly normal and free from pain. Four months after the operation was made, she returned and reported herself pregnant. I advised her to carry the child. She begged for relief, but I insisted she could carry the child perfectly well, and she went away, not in the best of spirits. I did not see her for some time after that, and when she returned she informed me that she had injected her uterus with hot water and produced an abortion upon herself. I have not seen this patient for some time, but she left my care promising to return if at any time she needed treatment. Such a result was of course encouraging, and led me to believe that if an ovary could be treated in that manner, behave respectfully afterward, and in the space of four months' time produce a healthy ovum that allowed of impregnation, it was certainly worth while to see if it couldn't do even more—that is, recover from cer-

tain pathological changes that threatened its existence, or even has destroyed a certain portion of its structure—when relieved of the surrounding condition which had produced these changes; and I determined to find out. A man situated as I am, has not an abundance of material with which he can experiment within the abdominal cavity, so I did not have the opportunity to again test such work upon the ovary until April 24, 1890, four months after the previous case. This patient, H. L., had been under my care previous to marriage for retro-displacement, and had worn a pessary for some time. She went West to be married, when, shortly after, she fell into the hands of a physician who tried to restore the uterus to position (the pessary having been removed after marriage) by putting her into the knee-chest position and making forcible pressure upon the uterus with a large male sound introduced into the rectum. This brilliant effort was followed by an attack of pelvic peritonitis which nearly cost the patient her life. Two years after marriage she returned East and placed herself under my care. She was then in a wretched condition, and both she and her husband begged that I would remove her appendages if it could be done with safety to her life. This I declined to do if I could save them. And, in a boarding-house, on April 24, 1890, I made the operation that I have described in the previous case—breaking up adhesions about the uterus and appendages, bringing up the latter and removing all cysts from them, and utilizing the round ligaments to hold the uterus in position. In this case I placed a pessary in the vagina to support the organ until firm union had taken place between the round ligaments and the fundus of the uterus. This patient returned to her home in the West. I have seen her every summer on my trips to California, and am in correspondence with her husband. She has one son, four years old, and is locally in a healthy condition, the uterus never having retroverted. The next case which I shall report, that was of particular interest came under my care three years later, in April of 1893. You can readily understand that one does not find a suitable case in every laparotomy he does, to which this method of treatment upon the appendages would be applicable even if desired.

However, during this interval between April 24, 1890, and January 23, 1893, I had operated upon six more patients in whom I had removed portions of the ovaries, or cysts which they contained, had broken up adhesions about, and straightened out the tubes,

and in two of the six cases had reopened the occluded fimbriated extremity of the tubes; and the records show that they recovered and were relieved of their symptoms. Case 10 of this series was one of more than usual interest, she being the wife of a physician, and both of them exceedingly anxious for children. She had suffered from repeated attacks of peritonitis, and came to my sanitarium for operation. He stood by while I proceeded with the work, and I saw hope disappear from his countenance as I rolled out the second, apparently hopelessly diseased ovary and tube. He was a man of intelligence and skill, willing to accept his own fate, but dreading the disappointment to his wife; so he begged if I could save enough of that appendage to preserve her menstrual function he would keep her in ignorance of her actual condition. I removed about two thirds of the ovary, and sewed the rest together with fine silk. I amputated half of the tube, and slit up the remaining portion for about half an inch (as you would the prepuce for a phymosis), and then stitched the mucous lining of the spread-out portion of the tube to its peritoneal covering all about with fine silk; this stopped any bleeding from the cut end of the tube. I then tacked what I had left of the ovary to the tip of this cut-off tube with fine silk, in order to keep them in apposition, and dropped it back into the pelvis. That was in the spring of 1893. Her husband returned to New York City last spring from California, where they live, for a short course in the Post-Graduate Hospital, and at that time reported his wife in excellent health. She menstruates regularly with but slight inconvenience, and had not suffered from recurrence of peritonitis. She is still childless; but as her husband was at the time of operation tuberculous, and now in a far advanced stage of tuberculosis of the lungs, I am contented to know that she is.

Case XIV., operated upon January 24, 1894, was one in which I believe I chanced the dangers of peritonitis, following my work, as much as I have at any time with the whole series of cases that I report, because (although I could not prove it, the husband making denial) the cause of the disease and the appearance of the parts from vulva to appendages seemed to be that of gonorrhœal infection. I will not take your time in narrating the history of this case, but will simply quote the results of physical examination, diagnosis and operation, as recorded in my history book.

Physical examination shows uterus fixed; right ovary much

enlarged, and firmly fixed ; left appendage not so bad, but all seem to be firmly adherent.

Diagnosis : Double salpingitis and ovaritis. Endometritis. Small fibroid on right lateral wall of uterus.

Operation : Laparotomy ; adhesions broken up—right ovary and tube removed, left ovary and tube freed from extensive adhesions—in doing which, tube was ruptured across ; both were glued to the posterior wall of the uterus, and when freed, left the latter raw. The tube was as large as my thumb, thickening along its entire length to the uterus. The ovary cystic and filled with a black clot, evidently the remains of the last ovulation. Adhesions of the fimbriated extremity to the ovary were dissected away with a scalpel, and the tube freed from the ovary for the length of an inch. Rupture across tube, and bleeding parts were sewed up with fine silk and cambric needle. Ovary and tube replaced, abdomen washed out, then packed with gauze ; abdominal wound sewed up, then *cul de sac* opened and gauze pulled out through vagina. I expected great difficulty in carrying this patient through the crisis, for the entire peritonæum of the posterior half of the true pelvic cavity, including posterior wall of uterus, was abraded and oozing, requiring the solid packing of the gauze to arrest it. She drained well through the vagina, however ; peritonitis did not supervene, and she recovered without an unfavorable symptom. I have watched her from that time to the present—nearly four years—and in conversation with her brother to-day, was informed by him that she was never in better health in her life. She menstruates regularly and without pain, but I could not learn that she had been pregnant. Here was a case where the diseased condition of the ovary played a minor part, and where it would seem almost impossible that such a diseased tube could take on resolution and return to a normal function, which the after-history of this patient would seem to indicate that it did. The success I had with cases up to this time, and the ease and comfort with which this patient convalesced, led me to believe that when I could reasonably exclude septic conditions from the appendages at the time of operation, I could venture to do almost any form of conservative surgery upon a uterine appendage, and expect union by first intention, and resolution of the hypertrophied structures to follow in its wake. I have purposely chosen for full report those cases which I considered the most dangerous, and which would illustrate the most varied pathological changes to the best advantage.

The next case which I wish to report was done on June 2, 1894. During the interval between January 24 and June 2 of 1894 I had made eight more such operations, with relief of all their symptoms and apparently good results. The case of June 2, 1894, is of peculiar interest, and is as follows :

Mrs. L. B., Chatham, N. Y., aged twenty-nine ; married ; one child ; one miscarriage ; uterus retroverted and bound ; prolapsed ovaries and tubes ; cervix and peritonæum lacerated. Was placed under ether in my sanitarium on the above date. One of my old teachers was visiting me at the time, and I asked his opinion of the case. We both examined her carefully under ether, and I then proceeded to carry out my plan of operation. The uterus was first curetted, then the cervix and perinæum closed. I then opened the abdomen, and, much to my surprise, what we supposed to be a retroverted uterus was an ovarian cyst, firmly attached to the posterior surface of the uterus, filled with a dark, grumous material, and in our manipulation we had ruptured the tumor and spread its contents among the intestines. I say we, because I want my teacher to bear half the blame for such an accident. We succeeded in removing the sac, leaving the posterior surface of the uterus abraded. The right ovary and tube was then brought up, and one half of the ovary removed. The tube was very much enlarged, but was allowed to remain, much against the advice of my teacher. The uterus was then fastened forward, in order to prevent a tilting back and adhesions forming between the posterior surface and rectum, and the pelvis packed with dry iodoform gauze. Now arose a complication I had not counted upon. I had sewed up the perinæum, and desired to drain the pelvis through the *cul-de-sac*. In spite of this fact, I determined to do so, and opened the *cul-de-sac* after closing the abdominal wall. This patient made a good recovery, and, much to my surprise, the perinæum, although sewed up with catgut and subject to the effect of pelvic drainage for a week, healed by first intention throughout. As the table of cases will show, this case reported herself as pregnant in the spring of the present year. In June last she wrote me that she had miscarried at four months, and the reason she gave for the accident was change of residence and settling her home ; but I am inclined to believe it was due to the imprisoned condition of the uterus by hysterorrhaphy. The latter is an operation which I consider thoroughly unscientific, the changing of one pathological condition for another, and I shall never perform it

again if by any other possible procedure I can avoid it. Up to this time I had limited my experiments to the saving of ovarian and tubal structure that did not contain pus ; but on January 20, 1895, a patient consulted me, who, after she had received my opinion, was willing to accept it under certain conditions—those conditions being that I should under any circumstances preserve her menstrual function. She was sent to me by Dr. Wedgewood, of Lewiston, Me., than whom I have no better friend in the profession, and was advised by him to be operated upon for relief of her condition. She was a young married woman, twenty-seven years of age, who had never conceived. The uterus was retroverted and wedged in the pelvis by what seemed to be a large double hydrosalpinx. I did not suspect pus, as she had never suffered from miscarriage or gonorrhœal infection, as far as she knew. She had a catarrhal endometritis, which I considered due to the displacement and pelvic congestion. I first curetted thoroughly, washed out, and touched the interior of the uterus with pure carbolic acid. (This is the routine procedure with me in all cases, before making laparotomy, and one I consider absolutely necessary if we intend to do conservative work within the pelvis.) Laparotomy was then performed, and, to my surprise, what I supposed to be hydrosalpinx proved to be large, double pyosalpinx, each holding at the least four ounces of pus. The left ovary was apparently healthy, while the right was beyond redemption. My promise not to destroy her menstrual function, if possible, prompted me to do that which probably would not have, at the time, seemed justifiable to many of you, and may not even now. The right ovary being hopelessly diseased, and the tube being distended to the size of a small bologna sausage, I removed them both, tying off close to the horn of the uterus. The left ovary was healthy. In removing the right appendage, I noticed that the pus which the tube contained was perfectly odorless ; it did not have the peculiar odor which I have noticed in my experience always attends gonorrhœal or septic suppuration. I therefore was led to believe that it was a mere non-infectious collection. Laboring under this impression, I determined to save the left tube and ovary if possible. I therefore, after freeing it from adhesions, delivered it through the incision, tapped the tube, and drained it of its contents, then washed it out thoroughly with bichloride solution 1 to 3000, forcing some of the latter through the tube into the uterus with a small intra-uterine syringe. The fimbriated extremity being thoroughly glued up, I

amputed an inch and a half of it and made the phymosis incision, which I have previously described ; brought the ovary up, and tacked it to the extremity of the tube. Let me digress for a moment at this point, and state that which for a moment I had forgotten to mention. The tube, before it was tapped, was fully an inch and a half in diameter, and the effect of the hot bichloride solution injected down through it was almost like that of electricity upon muscular fibre. It produced a rapid contraction of the tube, so that the latter was not more than a quarter as large in diameter when returned to the pelvis. I expected trouble in this case, and that trouble to be peritonitis ; but determined, if such occurred, to place the blame where it belonged—upon the shoulders of the husband and relations, who had limited my work. The patient, however, recovered without an unfavorable symptom, and left the sanitarium four weeks later. The operation was made on January 20, 1895, nearly two years ago. I have examined her several times since. She reported to me yesterday that she was in perfect health, aside from slight pain at time of menstruation when she rides the wheel too much, or in some other way overexerts herself, and she has gained considerable in flesh. In discussing the merits of this case, you may express the belief that I subjected the patient to a great danger—that of septic peritonitis —and even though she got well, the result did not justify the means. I grant you it was the only fear I had, and I have previously expressed my reasons for taking the risk. I may add to that reason the belief I entertained that the tubes, so enormously distended, had practically ceased the secretion of pus, and were simply storehouses for about the same quantity of pus they had carried for months ; and that if I could drain the one tube left *completely*, and wash it out thoroughly with an antiseptic like bichloride of mercury, that resolution would quickly take place, and Dame Nature would protect herself, in a very few hours, against any general sepsis from this one thoroughly washed point. We all of us know full well that in desperate cases, where we are obliged to break up extensive adhesions in the pelvis, when the drainage-tube and packing are resorted to, as the safety-valve for the relief and escape of accumulations within the pelvis, that we subject our patient to more danger than would attend this case, where the work was done entirely extra-peritoneal, before the tube was allowed to return to its normal position.

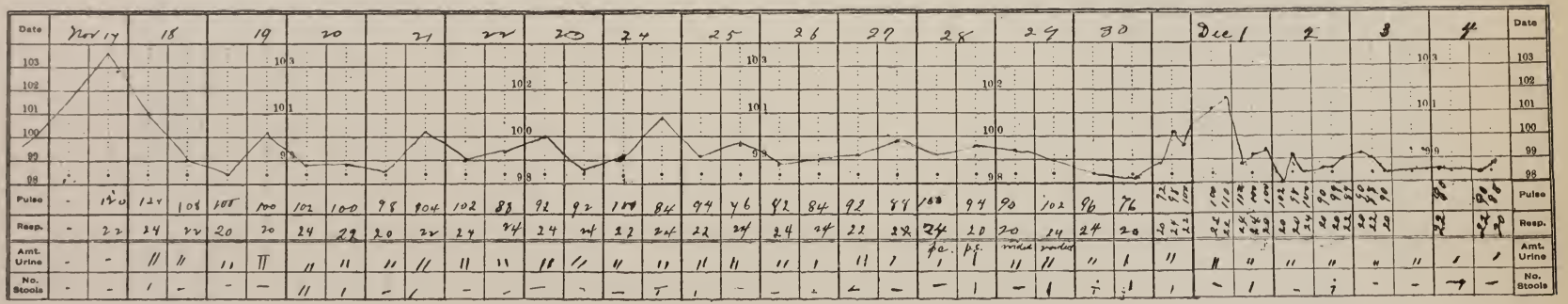
The next case in the series which is worthy of report in full is

Mrs. L. A., of Fall River, Mass., aged forty years, married nine years, never pregnant, a terrible sufferer from dysmenorrhœa and ovarian neuralgia. One could easily tell by examination, as she was a thin woman, that the entire uterus and both appendages were firmly fixed in the pelvis. I proposed laparotomy, to which she readily consented, provided I could give her any relief. Both she and her husband begged me, if possible, to save her appendages, saying that, although she was in her fortieth year and had been married nine years, they had not yet given up hope of having a child born to them. Preparations were made for the work, and my assistant began the administration of chloroform. She apparently took the anæsthetic all right, and I went to work. I was just about finishing the curettage, when it was noticed that the patient was acting badly. In a moment respiration had ceased, and the heart beat was scarcely noticeable with ear at the chest. We applied stimulants hypodermically, suspended the patient, applied heat to the entire body, and kept up constant artificial respiration from half past two o'clock until half past five before my patient showed signs of normal respiration and consciousness. She had so nearly slipped away from us, that when the circulation became re-established, it showed her skin mottled all over in large spots, where there had been apparently complete stasis of the capillary circulation. I dared not give her more of the anæsthetic—in fact, she did not need it, as she was at this time so dead to sensation that she could not feel the close contact of hot-water bottles. I was in a quandary as to what to do, whether to abandon the work, or attempt to finish it. The husband having left the house, I could not acquaint him with the circumstances, and after a moment's hesitation I determined to attempt to finish the work, even though she was sufficiently conscious to talk to me. I made the laparotomy as quickly as possible, dragged both appendages out of adhesions, with which they were completely covered. Found the right ovary and tube hopelessly diseased and removed it, but did not remove the left, although it had atrophied to the size of a filbert. The left tube was apparently healthy. I lifted them well up in the pelvis and shoved the omentum down behind them, closed her up as quickly as possible, and placed her in bed. She was drunk with whiskey that had been administered hypodermically, but I cared little about that if I could save her life. She recovered without any bad symptoms to record, and with the next appearance of her menses complained of some pain in the left side. This

was repeated with each reappearance of the function for some months. Her operation was performed on April 13, 1895; on August 28, 1896, when in her forty-second year, she gave birth to a healthy seven-pound boy that is now living. This I consider to be the most satisfactory case of the whole series which I report.

The next case which I shall report that will be of interest to you is one where I deliberately made the experiment of washing out a pus tube and returning it to the abdominal cavity, and chanced the dangers of peritonitis. The patient was brought to Harlem Hospital in an ambulance on November 17 with a temperature of $103\frac{4}{5}^{\circ}$, giving the following history: She had been receiving treatment for some time at a physician's office, for local trouble, and on this day, following his treatment, she had been seized with a severe chill, followed by a temperature as above, and accompanied by intense pain through lower abdomen. She was seen by him, and advised to go at once to the hospital. The treatment prescribed was hot lysol douches, turpentine stoops, and Seidlitz powders until the bowels moved freely. The cold application to the abdomen was then substituted for the stoop. This treatment was continued until November 30, when the morning and evening temperature both registered normal, the pain had disappeared, and the patient was very comfortable. It was the last day of my service, and she begged that I would do her operation before the service changed. I consented, and did the operation that afternoon by gaslight. I did not curette this case, which I undoubtedly should have done under any other circumstances, but went at once into the abdominal cavity. I found the intestines and omentum glued by fresh adhesions to everything in the pelvic cavity—bladder, uterus, appendages, and posterior pelvic wall, and bands of adhesions running across sections of the gut in such a manner as to make it seem almost impossible for them to have become freed by any effort of nature. I brought several feet of the intestines out through the incision and freed them from adhesions, washed them thoroughly with boiled hot water, and returned them; then I went into the pelvis, broke up the adhesions about the right appendage and brought it into view; it was about as large as a man's thumb and filled with pus. The agglutinated fimbriated extremity was easily opened, and the pus allowed to escape. I injected the tube its full length several times with a solution of bichloride 1 to 3000, and washed it out; then dried it off with hot sponges, and replaced it. The left tube was then

TEMPERATURE CHART.



Dr. Dudley's Case in the Harlem Hospital.

brought up, and although much enlarged and infiltrated, showed a salpingitis, but not a pyosalpinx. I washed it out, however, with the same solution, dried it, and replaced it ; then, with a large, flat sponge supporting the intestines in the pelvis, I washed the pelvic cavity out thoroughly with boiled hot water, dried it out thoroughly, and sewed the woman up. I have brought you the temperature chart in this case, so that you may see the range of temperature from the time she was brought into the hospital until the day of her operation, and from the time of operation to the present day. You will see that it jumped to 101⅗° the next day after the operation. This rise was due to several movements of the bowels. The temperature immediately dropped thereafter to 98⅘°, and only on one occasion did it go to 99⅖° after that. Here, I think, is a case that bears good witness that all cases of pyosalpinx need not necessarily be removed ; that Nature will take care of them if we give her a little assistance at the proper time. I shall make it my business to watch this patient carefully until I know what the final outcome in her case may be. You may possibly condemn me for my procedure in this case ; if so, I can only say that Experience alone has been my teacher, and I must be guided by her in preference to theory.

I will only tax your patience with a short report of one other case, simply because I bring this specimen, removed from that case, which you see is about one half the length of a Fallopian tube much enlarged. This operation was made on December 4 of the present year. Mrs. G., Irish, twenty-three years old, married, no children, no miscarriages. Symptoms : dysmenorrhœa. Diagnosis : Retroversion, adhesions and salpingitis. Curetting ; laparotomy ; string band adhesions holding uterus, broken up. Both ovaries cystic and tapped, left tube large, twice its normal length ; bent double upon itself, and the two bent portions firmly glued together ; fimbriatd extremity firmly glued to ovary and buried in adhesions. One half of the left tube was removed, which I show you here, the remaining portion split up for half an inch, and the flap stitched about, as I have previously described ; the tube washed out and dropped back ; wound closed, and patient put to bed. She was convalescing as rapidly as possible.

The after-treatment of all these cases I here report has been the simplest possible ; the patients are allowed to roll around in bed whenever they please. In no one of the sixty-five cases has peritonitis followed that was sufficiently well marked to be recog-

nized. In none of the cases have I failed to relieve the symptoms. These results I feel are sufficient to warrant me in claiming that this is a distinct advance in pelvic surgery in the proper direction—that of saving to woman every portion of her generative organs that can be saved, rather than subjecting her to the mutilating hysterectomy and the humiliating fact that ever after, having placed her confidence in us, she is an imperfect woman.

1.	Oct. 18, 1887.	(1) Reported fully in present article. Followed by pregnancy and childbirth.
2.	Dec. 6, 1889.	(2) Reported fully in present article. Followed by pregnancy and abortion.
3.	March 10, 1890.	(3) Cysts punctured. Uterus fastened forward.
4.	April 24, 1890.	Ovaries tapped. Uterus fastened up. Reported fully in present paper. Followed by childbirth.
5.	May 25, 1890.	One ovary removed, one tapped. Adhesions broken up.
6.	Feb. 2, 1892.	Ovaries cut in two. Uterus fastened forward.
7.	July 11, 1892.	Ovaries cut in two. Uterus fastened forward.
8.	Sept. 1, 1892.	Large cyst cut out of right ovary and ovary sewed up. Left ovary tapped.
9.	Sept. 15, 1892.	(4) Ovary removed. Adhesions broken up. Right ovary tapped. Pregnancy followed by abortion caused by a kick.
10.	Oct. 14, 1892.	Cysts tapped. Ovaries allowed to remain. Uterus brought forward and fastened.
11.	April 13, 1893.	Left tube and ovary out. Right tube and ovary bisected and half of each left. Now well.
12.	May 1, 1893.	Cystic ovaries and adhesions. Ovaries tapped and evacuated.
13.	June 22, 1893.	Ovaries not removed. Cysts punctured. Uterus fixed.
14.	Nov. 20, 1893.	Right ovary removed ; left cystic and tapped.
15.	Jan. 23, 1894.	Right tube and ovary out ; left tube split up. Reported in full in this article.

16. Feb. 10, 1894. Half of ovary removed and one tube removed.
17. Feb. 14, 1894. Right ovary removed. Left tube was twisted. Left ovary tapped.
18. Feb. 15, 1894. Half of right ovary removed. Uterus fastened forward.
19. March 1, 1894. Removal of diseased portions of ovaries. Sacs curetted out and sewed up.
20. March 22, 1894. Both tubes distended with pus, half their length. (Gonorrhœal.) Adhesions broken up. Ovaries tapped. Half of each tube amputated.
21. April 15, 1894. Adhesions broken up. Both ovaries tapped. Uterus fastened forward.
22. April 16, 1894. Plastic operation on ovaries.
23. May 15, 1894. Half of left tube and ovary removed. Patient now well.
24. June 2, 1894. (5) Large cyst on left ovary removed. Half of right ovary removed. Uterus fastened forward. Pregnant in spring of this year ; aborted at four months.
25. June 11, 1894. Half of each tube and ovary containing pus removed. (Gonorrhœal.)
26. June 12, 1894. Removal of large cyst from left ovary. Cured.
27. July 2, 1894. Cysts removed from ovaries, and cysts upon tubes removed. Cured.
28. Oct. 11, 1894. (6) One tube and ovary removed ; other tapped and uterus fastened forward. Cured.
29. Oct. 13, 1894. Ovaries cut and curetted. Tubes opened up. Uterus fastened forward. Cured.
30. Oct. 31, 1894. Ovaries cut and curetted. Tubes opened up. Cured.
31. Nov. 2, 1894. Cystic ovaries cut and curetted. Tubes opened up.
32. Dec. 11, 1894. Left ovary removed. Right cut and curetted. Gauze drainage through vagina. Cured.
33. Dec. 13, 1894. Right tube and ovary removed. Half of left tube removed. Cured.

34.	Dec. 14, 1894.	Large cyst in right ovary curetted out. Ovary sewed up. Small cyst on left ovary tapped. Adhesions broken up.
35.	Jan. 20, 1895.	Right tube and ovary full of pus. Removed. Left ovary healthy. Left tube full of pus ; half cut off and left. Reported fully in present article.
36.	April 13, 1895.	(7) Right tube and ovary removed. Adhesions broken up. Left ovary hard. Cured and gave birth to a son on August 28, 1896.
37.	May 11, 1895.	Large cyst removed from left ovary.
38.	May 15, 1895.	Right ovary cystic and curetted. Left ovary removed ; anterior fixation.
39.	May 18, 1895.	(8) Left tube and ovary removed. Right ovary bisected. Cured. Since borne a child.
40.	July 2, 1895.	Both ovaries bisected. Cured.
41.	Aug. 16, 1895.	Appendix removed. Right tube and ovary removed. Left ovary bisected.
42.	Oct. 3, 1895.	(9) By vaginal section ; both tubes found cystic ; punctured and returned. Since borne a child.
43.	Nov. 30, 1895.	By vaginal section, both ovaries brought out and portions removed.
44.	Dec. 18, 1895.	By vaginal section, portion of right ovary removed.
45.	Dec. 21, 1895.	Both ovaries bisected ; uterus fastened forward.
46.	Dec. 26, 1895.	Right ovary and tube removed. Portion of left ovary removed.
47.	Jan. 2, 1896.	(10) Ovaries tapped ; adhesions broken up ; uterus fastened forward. Single at time of operation ; married since ; now pregnant two and a half months.
48.	Feb. 6, 1896.	Half of right ovary removed.
49.	Feb. 27, 1896.	Portion of left ovary removed. Right ovary and tube removed.
50.	March 14, 1896.	Both ovaries found covered with a network of connective tissue ; proved to be tubercular. Patient gained twenty

		pounds ; seen and examined this week. Is perfectly healthy ; anxious for children.
51.	March 23, 1896.	Half of each ovary removed.
52.	April 12, 1896.	Right tube and ovary removed. Left tube, holding cupful of pus, adhered to great vessels ; stitched to abdominal walls and drained. Patient perfectly well.
53.	May 28, 1896.	Left ovary bisected and large cyst removed. Right ovary tapped ; uterus fixed forward.
54.	Oct. 2, 1896.	Right ovary bisected ; left ovary and tube removed.
55.	Oct. 29, 1896.	Left ovary and tube removed. Right bisected.
56.	Oct. 30, 1896.	Half of both ovaries removed.
57.	Nov. 3, 1896.	Right ovary bisected. Left tube opened.
58.	Nov. 7, 1896.	Both ovaries punctured.
59.	Nov. 10, 1896.	Adhesions broken up ; both tubes opened.
60.	Nov. 10, 1896.	Adhesions broken up ; both ovaries cystic and bisected.
61.	Nov. 17, 1896.	Left tube and ovary removed. Right ovary and tube cystic and tapped.
62	Nov. 19, 1896.	Both tubes aspirated.
63.	Nov. 24, 1896.	Left tube and ovary removed. Half of right ovary removed.
64.	Nov. 30, 1896.	Adhesions broken up. Ovaries tapped. Right tube full of pus ; washed out, dropped back.
65.	Dec. 4, 1896.	String-band adhesions broken up. Both ovaries cystic and tapped. Left tube very long, bent upon itself, firmly adherent. Half of it amputated.

A perusal of the table of cases will show that pregnancy followed in ten of them. Six children were born at the full term ; three miscarriages took place, the first produced by injecting the uterus with hot water ; the second by injuries received from a kick ; the third, as I have reported, claimed to be due to moving and settling of house, but I believe it due to the imprisoned condition of the uterus by hysterorrophy. The tenth pregnancy is still going on

at two and a half months, the uterus being fastened by hysterorrophy. It will be seen in summing up that I am able to report the occurrence of pregnancy in every six and a half cases. I have only been able to watch a very few out of the whole number, and I have no doubt that if I were able to trace the after history of all these cases, I should be able to record a much larger number of pregnancies.

THYROID AND OVARIAN THERAPY IN GYNÆCOLOGY.*

By Henry B. Stehman, M.D.,

One of the Gynæcologists to the Presbyterian Hospital, Chicago.

At the present time, the relation which subsists between special organs of the body and general nutrition is receiving unusual attention. As this subject becomes more fully understood it seems apparent that (Waller) the waste of one organ serves as raw material for another, and that this "interorganic" relation plays an important part in general metabolism.

How this influence is exerted we do not know. Some suppose that the secretion of these special organs affects nutrition by removing toxic substances which result from tissue change (Shafer). That, for example, one of the functions of the ovary is to eliminate organic toxins through the menstrual flow (Spillmann and Etienne); that the secretion of the thyroid favors uric acid excretion and thus increases nitrogenous denutrition (Irsai, Vos, and Gara); while others maintain that general nutrition of the body, and more especially the central nervous system, is affected by this glandular secretion entering the blood (Howell).

Whether the truth is found in one or both of these hypotheses it is difficult to determine, but we do know that these glands are so important to the general metabolism of the body that to remove some results in profound nutritive disturbances, while the removal of others is quickly followed by death of the individual.

By the side of these serious, indeed fatal, pathologic changes which follow the removal of these organs or glands, we have the most interesting fact that these morbid phenomena in a measure disappear after the ingestion of these substances. Landau states

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* Read before the Chicago Gynæcological Society, December 18, 1896.

that ovarian tissue given after oophorectomy seemed to him to modify the distressing nervous symptoms which usually follow this operation. In myxœdema, which is the invariable sequence of thyroidectomy, and which in women is accompanied by exhaustive menorrhagia, we find striking improvement following the exhibition of either thyroid substance or its extract.

But more than this, the pathologic disturbances which have followed the removal of various glands have served not only to throw additional light on their physiologic importance, but these same morbid symptoms have suggested this fact, that when they appear in the course of any deranged condition of the body, they subside upon the ingestion of tissue from a gland similar to the one whose removal is followed by these same phenomena. We have learned that the ovary has not only an external secretion (ovulation) and is active in producing the menstrual function, but that, in addition, it possesses an internal secretion which, similar to the testicle, modifies nutrition (Spillmann and Etienne) ; that the internal secretion, elaborated by the thyroid gland, which even in the presence of mineral acids (Baumann) maintains its integrity, exerts a vaso-constrictor influence upon the circulation, and consequently can be utilized in those conditions which follow vaso-dilatation, as the following cases will show :

Case I.—Mrs. A., aged forty-one. Widow.

Mother sickly for a period of ten years, before, during, and after menopause, owing to excessive metrorrhagia. First child born eighteen years ago ; convalescence fair. Second child born two years later ; health poor, patient suffering from great exhaustion. Six years later patient had a severe menorrhagia, confining her to bed for nine weeks ; from that date to three years ago menstruation has continued excessive, obliging her to remain in bed three or four days each month. During six years of this period she received local treatment, which at times gave considerable relief.

Three months previous to October, 1893, there was a complete suppression of menstruation, which preceded an excessive discharge lasting for five weeks. Three weeks later hæmorrhage for eight days. Suppression for three months, which was again followed by a severe metrorrhagic discharge of seven weeks' duration, during which time she was repeatedly curetted. Three weeks later a recurrence, which lasted for eight days, being the same in quantity. Suppression for eight weeks, followed by a re-

currence lasting twelve days. September, 1894, rest for six weeks, which was followed by a copious hæmorrhage lasting twelve days, and which was controlled by ergot. Up to February, 1895, menstruation regular, but excessive. A curetting in one of the hospitals in the city was performed about this time, which was followed by amenorrhœa for three months ; this in turn was succeeded by a persistent hæmorrhage of three weeks' duration, which almost cost her her life, and was only controlled by vigorous tamponade, hot douches, and internal medication. Three weeks later she returned to the hospital for curettage and repair of a cervical laceration, when she was again seized with a similar attack. She was informed that an abundance of intra-uterine polypi were removed, after which no menstrual flow appeared for nine weeks, which brings us to January, 1896. Up to March inclusive menstruation was regular as to time, but excessive in amount.

Curettage was performed in April, with a result similar as described before ; two months elapsed again without any sign of menstruation. She came under our care July 29, when she had already been flowing for eleven days, and in spite of vigorous local and internal treatment, the flow did not fully cease until six days later. Previous to her admission her attending physician, as well as the consultants, advised hysterectomy as the only means of relief, and it was for this purpose that she was sent to me at the hospital. Examination revealed nothing special as regards the adnexa, but the os was patulous, cervix soft, uterus large, admitting uterine probe a distance of four inches. The case was regarded simply as one of uterine hyperæmia dependent upon the menopause, and was so treated. Owing to the pronounced anæmia in consequence of the excessive loss of blood she was kept quiet in bed, but in spite of the ergot and astringents administered internally, three weeks after the cessation of the hæmorrhage she began to flow again, and although in the earliest stage uterine tamponade was resorted to, nine days elapsed before it entirely ceased.

September 3 we began the thyroid tablets three times a day, each tablet representing about one sixth the size of a sheep's thyroid. Aside from a daily vaginal douche no other treatment was given ; the latter part of the month patient menstruated for four and a half days, the quantity being normal in amount. The treatment was continued, patient being up and about all the time. Four weeks later menstruation was normal in quantity and amount. While there appeared no evidence of any disturbance due to the

thyroid exhibition, we decided to lessen the quantity and also the frequency of the dose, giving the amount of one tablet daily. At the end of three weeks menstruation occurred again, the discharge being about the same as the previous two months. Another menstruation has followed this, with same result.

Case II.—Mrs. ——, aged twenty-seven.

Menstruated at eleven. Has always been painful, the pain being such as would suggest obstructive dysmenorrhœa, the discharge invariably profuse. Married eleven years ago. Never pregnant. No history of specific vaginitis. Three years ago menstruation became more painful and more excessive and also irregular, occurring at intervals of one, two, or three weeks, and lasting from six to nine days, confining patient to bed.

First examination revealed pelvic viscera completely ankylosed in one indistinguishable mass. There was great tenderness in the region of the *cul-de-sac*, more upon the left than the right side, but the recognition of visceral outlines was impossible. She came to me with a diagnosis of uterine fibroma. Thyroid tablets were prescribed same as in previous case and continued during menstruation, which she reported was less in quantity than at any time during the past two years. The following month patient presented a still more favorable report, for the flow was not only less than the previous month, but pain was entirely absent. After two months' exhibition of the thyroid, a remarkable change has taken place in the pelvis. The uterus can easily be outlined, which by the pelvimeter measures four and one half inches, and is readily moved, causing no pain. The right ovary hangs suspended somewhat below its normal position, whereas the left occupies the *cul-de-sac* to the left of the median line and is quite tender on pressure. Patient's general health considerably improved, with anæmia far less pronounced.

Case III.—Mrs. ——, aged thirty-nine.

Married. Had several children and enjoyed very good health until after losing a three months' fœtus about a year and a half ago. After this accident convalescence was slow. Subinvolution of uterus was quite marked, which was further complicated by a very pronounced purulent endometritis. The size of the uterus was suggestive of myomatous degeneration ; in fact, she was for two months under treatment for uterine fibroid. One year ago patient came under my care ; thorough curettage was done and the endometrium painted with fifty per cent. carbolic acid with

alcohol. One month later high amputation of cervix was done after Schroeder's method. After this, patient improved in general health quite perceptibly, but in spite of internal use of syrup of calcium iodide, with intra-uterine alterative treatment persisted in for months, the uterus failed to diminish much in size. Menstruation was regular, but, as she said, always profuse.

After taking thyroid tablets for over three months, allowing an interval of rest to intervene occasionally, the patient reports that her extreme nervousness has marvellously improved. She further states that during this period her menstruation has not only been less in quantity, but shorter in duration. During this time no subjective symptoms attributable to the treatment ever appeared. The uterus to-day is fully one third less in size than it was at the beginning of the thyroid treatment, and this diminution began to be perceptible two months ago.

These cases, and others which I will not report, seem to me to present a strong presumption that the thyroid substance does inhibit the blood supply of the pelvic viscera. Moreover, it would appear that the continued exhibition of the gland caused such pronounced nutritive changes that not only do pathologic conditions disappear, but that even the habit of profuse menstruation, which seemed firmly established, yielded to its influence.

But, by the side of a therapy which would seem to inhibit the menstrual function, I desire to place another glandular substance which a limited experience from therapeutic observation, together with clinical facts, warrants at least a suspicion that deficient ovarian secretion may frequently account for amenorrhœa.

To the dual function of reproduction and the regulation of menstruation, we must concede to the ovary an additional function, viz., that of internal secretion. Moreover, it becomes a question whether the latter may not be a factor in menstruation—that is, whether the activity of the ovary may not be deficient and in consequence the nutrition of the central nervous system necessary to a healthy physiologic performance of this act be lacking. It seems to me that what evidence we have points in that direction, and warrants us in the effort to improve nutrition by the administration of ovarian substance.

This hypothesis, furthermore, explains the nutritional changes which occur at puberty in the female ; the phenomenal development of young pregnant women, and the general improvement in nutrition of the pregnant of any age. It explains why the nervous

phenomena which are so distressing at the normal menopause, or when it is artificially induced, seem relieved upon the administration of this extract. Furthermore, it would appear that by increasing the quantity or possibly improving the quality of ovarian secretion by its internal administration as contained in ovarian structure, we supply that which is needful in healthy physiologic tissue change, to produce normal menstruation.

Case I.—Miss ——, aged eighteen.

Menstruation began at thirteen ; has been fairly regular until twelve months ago. During this last year she has had nothing but a slight vaginal discharge, no evidence of menstruation. She is fairly nourished, eats and sleeps well, but becomes easily exhausted upon the slightest exertion. Complains of continual headache. She has had no treatment. No evidence of any physiologic cause for the amenorrhœa.

For two weeks she received a general tonic ; then one tablet of ovarian extract three times a day, the tonic being discontinued. Twenty-one days later she called at my office and stated that a bright menstrual discharge had appeared that morning, and I learned afterward that the flow continued for six days. Menstruation has appeared regularly since then.

Case II.—Mrs. ——, aged thirty-seven.

Nutrition fair, exceedingly neurotic. Had one miscarriage, and later one child seventeen years ago, from which time she dates her suffering, such as pain in region of each ovary, backache, shooting pains in the limbs, etc. Local examination revealed all the symptoms which accompany endometritis.

The uterus was curetted and a lacerated cervix repaired. Following this treatment she improved somewhat, but the dysmenorrhœal pains still persisted, and as for the backache, she was never free from it. One ovarian tablet was prescribed t. i. d. ; after one month she reported that she passed through her sick week with the greatest comfort. No pain of any kind ; even the backache was gone. In addition to this, she insisted that her nervous symptoms had subsided in a great measure, and that she considered herself well. Upon further interrogation, I found that she suffered less from mental and physical fatigue than formerly, that her work was less tiresome, and that she seemed to be under the influence of a powerful muscular and nervous stimulant. These symptoms are strongly suggestive of those who follow the ingestion of testicular extract (Howell).

As additional evidence that the administration of ovarian tissue modifies ovarian nutrition, I would report the following case :

Case III.—Mrs. ——, aged twenty eight.

Married six years. Three years ago she aborted at three months' gestation. Since then she has not been well, suffering especially at her menstrual periods. This dysmenorrhœa was of the ovarian type. Local examination revealed a uterus that had undergone hyperinvolution ; the fundus seemed only half the size of that of a normal uterus, and the canal diminished fully one third. The broad ligaments, ovaries, and tubes normal so far as can be discerned by touch.

The administration of the ovarian tablets in this case relieved the ovarian pain entirely, but it appeared in the uterus. Previous to taking the tablets the uterus was entirely free from pain, but after the ovaries were relieved and uterus suffered. The pain was expulsive in character, and the discharge, while clotted, was quite profuse.

As to the therapeutic value of ovarian extract in the relief of those nervous phenomena which follow double oophorectomy I cannot speak positively, because observations have not yet been made in a sufficient number of cases. Those cases which I have studied certainly suffered less distress than is usual, but whether this comparative freedom from the hot and cold flashes was due to the extract it were better to leave more extensive clinical facts to decide.

In those cases of neurasthenia, with poor nutrition, and in consequence disordered pelvic function, ovarian tissue is truly indicated. The extract not only modifies the nutrition of the ovary, but also general nutrition, and this return to the normal makes physiologic processes possible.

I have also noticed that some of the patients who were taking the thyroid extract suffered more pain in the mammary glands previous to menstruation than they did previously. This observation is in accord with the investigations of Hertoghe, who found that thyroid juice administered to animals increased the quantity without affecting the quality of milk. He also found that in nursing women, with diminution of lacteal secretion synchronous with the appearance of menstruation, after administering the extract the glandular secretion was restored.

The foregoing facts suggest an intimate nutritive relation between the pelvic generative organs and the thyroid, and show that

the ovary, too, shares in some mysterious manner in the processes of general metabolism.

To what extent these structures may be used in therapeutics will depend, for the most, upon our comprehension of their physiologic relation. At any rate, any line of study which will throw light on this subject is directly in line with rational medicine.

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ECTROPION OF THE CERVIX IN NULLIPARÆ RESEMBLING LACERATION OF THE CERVIX.*

By Charles P. Noble, M.D.,

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The diagnosis of laceration of the cervix carries with it the presumption of an antecedent pregnancy unless it can be definitely shown that the cervix has been torn by operative treatment; hence, it is of medico-legal importance to render the diagnosis of this condition as exact as possible, and at the same time to recognize all possible sources of error arising from other conditions which simulate a laceration. It is because of their medico-legal importance that the following cases are reported:

Miss X., aged thirty-five, consulted me in June, 1895, and presented a letter from her family physician describing her symptoms, which were largely nervous in character, and stating that he thought they were due to a small tumor growing in the anterior wall of the cervix and projecting into the external os uteri. On examination a patulous os uteri was felt, and to the touch there was apparently a moderate laceration of the cervix. On inspection it was found that a well-marked ectropion was present, simulating a laceration of the cervix, and that the mass attached to the anterior wall of the cervix, which projected into the os uteri, consisted in a much hypertrophied anterior column of the arbor vitæ. A careful examination satisfied me that the cervix was not lacerated, although the appearances were very suggestive, and a superficial examination might readily have led to an erroneous diagnosis. The uterus was dilated and curetted, and the cervix was ampu-

* Read before the Philadelphia Obstetrical Society, December 3, 1896.

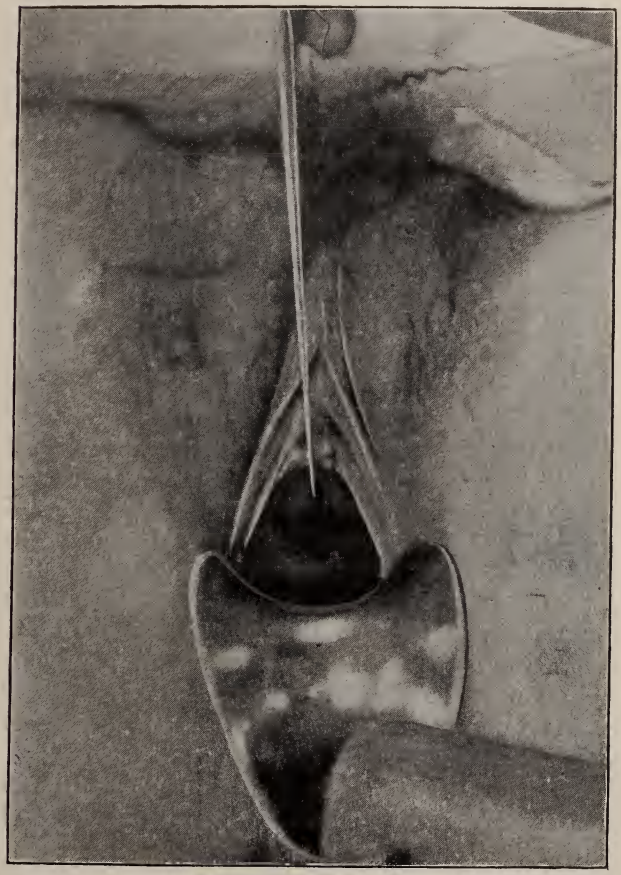
tated, care being taken to excise the redundant tissues of the anterior column. The parts were restored practically to their normal condition, and with great benefit to the health of the patient. This patient was interrogated as to the possibility of a previous conception and stated that she was a virgin, which statement I have no reason to question.

Miss Z., aged nineteen, consulted me in December, 1895, for the cure of obstinate dysmenorrhœa. Upon examination by touch a patulous external os uteri was found with apparently a bilateral laceration of the cervix. Upon inspection a well-marked ectropion of the cervix was seen to exist, and the appearances were highly suggestive of a laceration of the cervix. No scar tissue, however, could be seen in the angles, and after a careful examination I became satisfied that the condition was one of ectropion and not of laceration. Both the anterior and posterior columns of the arbor vitæ were greatly hypertrophied, and projected into the external os uteri. Either column was large enough to fill up the external os, hence they were crowded alongside of each other, giving the external os an irregular outline, instead of the usual transverse slit, as shown in the accompanying illustration, which was obtained from photographs made for me by Dr. W. D. Robinson. The uterus was dilated and curetted and the cervix amputated, restoring the parts to approximately their normal condition. The operation was followed by relief of the dysmenorrhœa and restoration of the patient to health.

The tissues removed by amputation in this case were sent to Dr. Thomas S. Cullen, of the Johns Hopkins Hospital, who made the following report :

"The specimen consists of the lower portion of the cervix. The tissue is 3 × 2.5 cm., and averages 1 cm. in thickness.

"*Examination of the alcoholic specimen.*—The everted cervical mucosa, with its delicate folds, is everywhere visible. In the centre is the slit-like opening of the cervix, 1 cm. in breadth. Surrounding the margin of the specimen is a small zone of the vaginal portion of the cervix. Which is the anterior and which the posterior is impossible to say. The cervix is, however, divided into four segments, which are nearly uniform in size. This division is caused by four shallow clefts commencing in the cervical canal and extending outward nearly to the vaginal portion of the cervix. [Caused by the hypertrophied anterior and posterior columns.] It looks as if there were simple eversion of the cervical mucosa.



Case of Miss Z.

"*Histological examination.*—A section extending from the vaginal portion of the cervix on one side through to the vaginal portion of the opposite side shows that the squamous epithelium of the vaginal portion is intact. Whether the epithelium covering the everted cervical portion has been cylindrical or flat it is impossible to say, the alcohol having so contracted the superficial portions. The cervical glands are seen opening on the surface, and also are abundant in the depth of the stroma. On examining the stroma of the cervix no evidence of a scar can be made out. Sections made in various directions give like results.

"*Diagnosis.*—Eversion of the normal cervical mucosa."

It is unfortunate that the tissues removed by amputation in the first case were not examined also, as then microscopical as well as clinical evidence of the real nature of the condition would be at hand. Numerous cases of granular erosions of the cervix and not a small number of slight ectropion of the cervix in nulliparous patients have come under my observation, but the two cases reported above are the only ones in which the conditions were such as to make a diagnosis of laceration of the cervix a probable one. Dr. Cullen's report assists in substantiating the diagnosis of ectropion as against laceration, but unfortunately throws no light upon the cause of the ectropion, as the report indicates that the tissues were practically normal. Clinically the conditions were far from normal, and resulted in breaking down the health of the patient, who was rendered unable to perform her usual duties. Further evidence of the abnormality of the condition consists in the fact that her health was restored when these tissues were removed by operation.

The question of possible pregnancy was investigated in this case also, and I am satisfied that this patient like the first was a nullipara.

Ectropion of the cervix has been recognized as a separate condition since Roser described it as "inflammatory ectropion," together with what he called "cicatricial ectropion," and which is now recognized as laceration of the cervix (*Archiv für Heilkunde, II. Jahrgang, Heft* 76, No. 298, Leipzig, O. Weigand). A moderately thorough search of the literature shows only two references, however, to the possibility of confounding the two conditions in diagnosis to be found in the literature. The two articles which have the most direct bearing on the subject are one by Fischel upon the morphology of the cervix uteri, quoted by Penrose (*Archiv f. Gynäkologie*, 1880, Bd. xvi., S. 192) and one by Pen-

rose entitled "Congenital Erosion and Split of the Cervix Uteri" (*Amer. Jour. Med. Sciences*, May, 1896). Fischel calls attention to the fact that a congenital malformation of the cervix may resemble a laceration.

"I am now able," he says, "to show a photographic representation of the cervix of a newborn infant which presents an inferior degree of this condition. The separation of the lips, does not extend all the way to the vaginal junction, but concerns only the two fifths of the lateral corners. Nevertheless, the two lips, deprived of their commissures, gape open, the crest of one being 9 mm. from that of the other, exposing the cervical surface of both lips for a distance of $\frac{5}{6}$ mm. This case shows that a peripheral notching of the cervix is not always a sign of a previous labor, but may represent a condition of the cervix in pregnant women whom we were forced to consider primiparæ not only through their own statements, but also from the condition of the external genitalia. This case is of great forensic importance, in that the proof of a former labor can no longer be claimed for such a condition of the cervix."

This is a distinct recognition of the possibility of some other cause than a laceration in labor or by instrumental means giving rise to a condition simulating laceration of the cervix, and also of the forensic importance of this fact. Fischel, however, was dealing with congenital conditions found by examining the bodies of young infants.

Penrose reports the case of a virgin in which the cervix was mushroom-shaped, the face of it being round and about one and a half inches in diameter. The external os was transverse and one third of an inch broad. Upon the face of the cervix were several scattered patches of erosion. The cervix was amputated and examined microscopically, with the following result:

"The cervix was covered with squamous epithelium, except on the small patches of erosion, where cylindrical epithelium was present. Racemose glands (like the normal glands of the cervical canal) opened all over the face of the vaginal cervix, in front, behind, and to the sides of the external os. They were found as far as one half to three quarters of an inch from the external os. These glands opened on the vaginal aspect of the cervix, where it was covered with squamous epithelium, and this epithelium extended to the ducts of the glands, which were lined with cylindrical epithelium. The vaginal cervix was, in fact, a glandular structure."

Penrose considers that this condition was congenital in origin and due to the development upon the vaginal aspect of the cervix of those structures which are normally confined to the cervical canal.

I have myself seen not a small number of cases similar to that described by Penrose and illustrated in his article, and have likened the shape of the cervix in such cases to that of a "pig's snout," the peculiar rim or border which runs around the vaginal cervix being quite similar to the shape of the snout of a pig, and of course somewhat similar to that of a mushroom. Cervices having this peculiar contour are usually found in patients having an imperfect development of the sexual organs, and, as a rule, instead of having a "split" of the cervix suggestive of a laceration, they have a very narrow os uteri—the so-called "pinhole" os. Erosions are quite common in such cases.

The etiology of the ectropion in the cases which I have reported is obscure. The condition may have been congenital in origin, but there is no evidence of this fact. In both cases there was well-marked pelvic congestion, and both patients had been overworked, so that a possible explanation is that pelvic congestion caused a simple hypertrophy of the mucous membrane of the cervical canal, followed by ectropion. My object in reporting these cases, however, is not to theorize concerning the etiology of the condition of ectropion in nulliparæ, but to insist upon its medico-legal importance.

1637 North Broad Street.

VAGINAL LIGATION OF THE UTERINE ARTERIES FOR FIBROIDS OF THE UTERUS.*

By Augustin H. Goelet, M.D.,

Professor of Gynæcology in the New York School of Clinical Medicine.

At the April meeting of the New York County Medical Association, 1894, I described this operation in detail, and reported a case recently operated upon.† It was then too early to say what the ultimate result of the operation would be, as it had only been

* Read before the New York Obstetrical Society, December 1, 1896.

† Reported in the American Medico-Surgical Bulletin, June 1, 1894.

recently suggested. I bring up this subject again to report further upon this case and to give the result of a riper experience with the operation, and at the same time I will report another case in which the result has been most satisfactory and encouraging.

In the first case referred to the artery on one side only was completely and permanently obliterated. Silk was used, and suppuration at the site of the ligature on one artery necessitated its removal, and the circulation on that side was restored. In spite of this the tumor, which before the operation was about the size of the fist, continued to diminish in size, and is now only about the size of a good-sized walnut. Menstruation, which was profuse and prolonged before, is now normal in amount, and continues only a week unless the patient takes unusual exercise during this time. I have advised a repetition of the operation on the one side, but the patient's condition is at present so satisfactory she will not consent. I shall keep the case under my observation, however, and if any increase is noted at any time, shall insist upon repeating the operation, believing that it will cause complete disappearance of the tumor.

In my later cases I have sought to secure complete and permanent obliteration of the arteries, as I believe, in the light of the recent experience, this is essential. In order to make this certain I have carefully isolated the arteries, tied them in two places, and divided them between the ligatures. When this is not done, and especially when the vessel is not carefully isolated before the ligature is passed around it, the circulation is often only partially and temporarily obstructed. The tissues surrounding the vessel being included in the ligature acting as a protection, shield the artery, and as it shrinks the ligature loosens and the circulation is restored. The only positive way of completely cutting off the circulation is to sever the artery. The attempt to pass the ligature without incising the vaginal vault or without isolating the vessel is uncertain blind work, and will be resorted to only by the timid operator. It really involves more risk of wounding the ureter or including it in the ligature.

Technique of the Operation.—The patient should be as carefully prepared as for a vaginal hysterectomy. The vulva is shaved and rendered aseptic. The vagina is scrubbed with soft-soap and washed out with a one per cent. solution of lysol. The cervix is then dilated and the uterine cavity is thoroughly curetted, washed out with an antiseptic solution and packed with iodoform gauze.

A traction ligature is now inserted through both lips of the cervix. With this the uterus is drawn down and over to one side, so as to expose the left vaginal vault. A semicircular incision about an inch and a half long is made through the vaginal wall at the cervico vaginal junction to the left of the cervix. With the index fingers the vaginal tissue is carefully separated from the broad ligaments at the anterior angle of the incision which frees the bladder and pushes the ureter to one side, out of reach. Posteriorly the broad ligament is carefully separated in the same manner without penetrating the peritonæum. By passing one finger in front and the other behind the base of the broad ligament is grasped between them, and the pulsation of the uterine artery can be felt. It is carefully isolated, sized with a broad ligament clamp and drawn down. A curved aneurism needle, such as I show you, carrying a stout catgut ligature, is passed up along the finger as a guide and around the artery to the outer side of the clamp and tied. A second ligature is passed around the artery nearer the uterus, to the inner side of the clamp, and when this is tied the clamp is removed and the artery is divided between them.

The cervix is now drawn over to the opposite side, and the same manœuvre is repeated on the right side. The wounds are now irrigated with a one per cent. solution of lysol, and the vaginal incisions are closed with a continuous catgut suture. The vagina is packed loosely with iodoform gauze, which is renewed after forty-eight hours. The operation is done with the patient on the back in the lithotomy position. A broad perineal retractor with a short blade is used. Sometimes a narrow-bladed lateral retractor is employed, being inserted through the vaginal incision to hold the ureter to one side.

The needle which I employ for carrying the ligature around the artery is one of special design, and is made for me by Messrs. J. Reynder & Co. It is set at a more obtuse angle to the shaft than those ordinarily made, and the point is semisharp instead of blunt, but it is not sharp enough to wound the artery.

The patient is confined to bed for ten days or two weeks. There is usually no elevation of temperature following the operation, and the wounds heal promptly if strict asepsis has been preserved throughout.

In all of my cases some notable diminution in the size of the growth has always followed within a few months, and in those which I have been able to keep under observation this result has

been permanent. The menstrual derangement has likewise been overcome.

I attribute the good results which I have had from this operation to complete obliteration of the vessels, and to the fact that it has been restricted to interstitial growths which have not extended above the level of the umbilicus, and to small superperitoneal growths which spring from the wall of the uterus below the fundus, and where there are no extensive adhesions through which the tumor may obtain nourishment.

I cannot say that I have seen the tumor completely disappear after this operation, unless this claim can be made in the case presented this evening, and yet this result may be expected. The complete obliteration of the uterine arteries cuts off suddenly two thirds of the blood supply to the uterus, and any tumor attached thereto and receiving nourishment from it. Unless, therefore, the tumor has formed attachments with adjacent organs or structures, and is furnished additional nourishment through adhesions and new channels of circulation, this sudden arrest of the circulation and nutrition must produce a profound impression upon a growth of low organization like fibroid tissue. In one of my more recent cases, which I showed at the November meeting of the Society for Medical Progress, the result has been most satisfactory, and for this reason I will report it here in detail :

Mrs. K., forty-five years old, the mother of four children, enjoyed good health until the birth of her last child four years ago. Since that time she has suffered pain in the back and inguinal region. For the last year she noticed a growth in the lower part of the abdomen, which steadily increased in size.

Menstruation was profuse and prolonged for a week or more, and recurred every three weeks. She suffered also from pressure symptoms, and had a profuse leucorrhœa.

When she came under my observation last May examination revealed an interstitial fibroid in the posterior uterine wall which filled the pelvis and extended to the level of the umbilicus. The uterine canal measured five inches. On June 2 both uterine arteries were ligated through lateral incisions in the vaginal wall, and were divided.

The patient made a rapid and uneventful recovery, and left the sanatorium at the end of two weeks.

Examination September 19 showed the uterus only a little larger than normal ; the canal measured three inches, and no dis-

tinct trace of the tumor could be made out by careful bimanual examination. Menstruation for the past three months has been normal in character and amount, continuing only three days, and the other symptoms have entirely disappeared.

This patient was examined by Drs. H. J. Garrigues Bénard Gordon and Herman L. Collyer when presented to the Society for Medical Progress in November, and the result as reported above was verified.*

This is the first case where complete obliteration of the arteries was assured by dividing them between the ligatures, and the result, which is certainly the best that I have observed after this operation, justifies the conclusion that this is the proper method of procedure.

If this result can be secured by so simple an operation, entirely devoid of risk, in a class of cases where hysterectomy is generally believed to be necessary, it will certainly be preferred, more especially as it would in no way militate against a radical operation should it subsequently become necessary.

The chief advantages in favor of ligation of the uterine arteries in properly selected cases of uterine fibromata may be enumerated as follows, viz. :

(1) It is devoid of risk, and the peritoneal cavity is not opened.

(2) It is easily done.

(3) It confines the patient to bed only two weeks.

(4) It relieves all symptoms produced by the tumor.

(5) It effects marked diminution in the size of the tumor, which in some instances, at least, almost entirely disappears.

(6) It does not in any way interfere with a hysterectomy should it subsequently become necessary.

(7) It does not unsex the patient.

(8) The result is manifest within six months, and the patient is not disabled nor inconvenienced by the operation.

108 Seventy-third Street, West.

* At a subsequent meeting of the Obstetrical Society this patient was presented and was examined by Drs. Malcolm, McLean, Brettauer and the President, who verified the result found by the other gentlemen.

THE PATHOLOGY OF UNINTENTIONAL ABORTION.*

By Karl F. M. Sandberg, M.D.,

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Abortion may be a symptom of a vast number of diseases, and as a diagnosis it can be classed with such terms as amenorrhœa, dysmenorrhœa, leucorrhœa, and a multitude of traditional symptomatic diagnoses, which originated when gynæcological pathology was in its infancy. It may deserve somewhat more to be considered a proper diagnosis on account of its immediate and remote importance to the health of the mother and on account of the special treatment it requires, which, to a certain extent, will be the same for all cases; but the time is certainly at hand, when we should consider it our duty in each case to endeavor to discover the disease which has caused the abortion, and of which the abortion is a symptom.

The pathology which causes abortion may be found (1) in the ovum, (2) in the mother, or (3) in the father.

1. *The ovum.*—The pathological lesion may be in the fœtus, in the umbilical cord, or in the fœtal membranes.

In the fœtus.—The fœtal mortality is supposed to exceed that of any other period of life. The disease most frequently fatal to the fœtus is *syphilis*. Ruge has estimated that eighty-three per cent. of premature labors and still-births are due to syphilis. Of six hundred and fifty-seven pregnancies in syphilitic women, as collected by Charpentier, thirty-five per cent. terminated in abortion, and of the children that went to term a large number were still-born.

Manifestations of syphilis during fœtal life may assume the greatest variety. Some of the more common forms are: Osteochondritis, with occasional separation of the epiphyses of the long bones, excessive growth of connective tissue in the walls of the blood-vessels, in the liver, spleen, kidneys, brain and other organs, nodes in the lungs or bronchial glands, localized suppurations in the thymus and lungs, peritonitis, as well as eruptions on the skin and affections of the mucous membranes.

* Read before the Chicago Gynæcological Society, December 16, 1896.

The result of fœtal syphilis is not often abortion, more frequently miscarriage and premature labor.

Some infectious diseases may be transmitted from the mother to the fœtus, and may be very disastrous in their effects upon the fœtus. *Typhoid fever* in the pregnant woman in about sixty-five per cent. of the cases results in interruption of the pregnancy. Neuhaus found the specific bacilli in the lungs, spleen and kidneys of a fœtus expelled at the fourth month from a woman who was convalescing from a prolonged attack of typhoid fever. In other cases the death of the fœtus has been attributed to asphyxia as the result of alteration of the blood and elevation of the temperature.

Of thirty-four cases of *malaria* in pregnant women, observed by Negri, eighteen per cent. terminated in premature expulsion of the fœtus. Symptoms of disturbance in the unborn fœtus at regular intervals, corresponding or not to the malarial paroxysms in the mother, have been observed, and interpreted as manifestations of malarial poisoning of the fœtus. Observations have also been reported of symptoms of periodical seizures in the new born baby, beginning immediately after birth, and fœtus has been born with distinct malarial enlargement of the spleen. Aside from this direct action, malaria in the mother seems to have a deleterious influence on the growth and development of the fœtus.

In cholera early abortion is the rule ; and if the child should be born at or near term, it dies in a few days. Tarnier, however, says that there is nothing to justify the belief that cholera directly affects the fœtus.

When the mother is attacked with *confluent smallpox*, she almost always aborts, but not necessarily when it is discreet or modified. (Playfair.)

Tuberculosis and yellow fever may also cause the death of the fœtus, as may also occasionally, but more rarely, *measles*, *scarlatina*, *erysipelas*, *septicæmia*, *articular rheumatism*, and *recurrent fever*.

Of non-infectious diseases that may cause the death of the fœtus may be mentioned *lead poisoning*. Mr. Paul has collected (*Arch. Gen. de Méd.*, 1860) eighty-one cases in which it caused the death of the fœtus, in some not until after birth. It seems to have affected the fœtus occasionally even when the mother developed no symptoms. *Peritonitis and pleurisy* may be disastrous to the fœtus. *General anasarca* of the fœtus usually causes interruption of the pregnancy from the fourth to the eighth month. *Rachitis* may also

be mentioned as a cause. *Traumatism* may injure the fœtus through accidents to the mothers, and may cause fractures of bones, especially of the skull, and internal injuries. *Perforating wounds* of the abdomen of the mother may affect the fœtus. When the condition of pregnancy is overlooked or mistaken for some pathological condition, injuries to the fœtus may result from instruments in the hands of the physician introduced through the uterine canal, or through the walls of the uterus.

The umbilical cord.—Exaggerated torsion of the cord has been observed and regarded as a cause of fœtal death, but most modern observers consider it a post-mortem occurrence. *Stenosis of the umbilical vessels*, caused by excessive development of connective tissue in the walls of the same, may be found, and is usually attributed to syphilis. The development may be so enormous through the entire walls of the arteries, that it is impossible to distinguish the different coats. The affection of the vein may cause immense dilatation of healthy portions, and may occasionally end in rupture and extravasation of blood ; or the impediment to the flow of blood from the placenta may cause œdema of this organ and hydramnion. In addition to the thickened walls we may find the whole substance of the cord infiltrated with granulation cells still further obliterating the lumina of the vessels. *Periphlebitis* may also diminish, but not seriously, the calibre of the vein. The arteries are occasionally obstructed by *atheromata* and *thrombosis*. Pinaud has seen the vessels of the cord obstructed by an overdevelopment of the valves. A true knot of the cord may, although rarely, be drawn so tight as to shut off the placental blood supply. *Coiling of the cord around the fœtus* has occasionally caused death.

The Amnion.

Hydramnion.—The etiology of this condition is not sufficiently well known, but it can probably in most cases be attributed to some impediment to the circulation of the fœtus, the umbilical cord or placenta. The fœtus is very often found dead and shrivelled ; the death of the fœtus and the hydramnion could probably generally be traced to the same etiology. Premature expulsion of the fœtus often supervenes, and it does not seem entirely impossible that this condition, as well as *oligo-hydramnios* and *amnionitis* occurring early in pregnancy may occasionally cause abortion.

The Chorion.

In the *chorion* we may find *cystic degeneration of the villi*, charac-

terized by hypertrophy and cysts of the villi. The cysts may vary in size from a millet seed to a grape, or exceptionally even to a hen's egg, connected with one another, and with the base of the chorion by pedicles of varying sizes. The general involvement of the whole chorion is the rule, but exceptionally the placenta alone is affected. Still more rarely the disease is found in isolated spots upon the chorion læve. The change consists in an overproduction of true mucous tissue within the villi. The affection is limited to the endochorion, and constitutes a true myoma of the chorion. (Virchow.) The expulsion of the ovum generally takes place between the third and six months of pregnancy, and its size is considerably larger than a normal ovum at the same term. Upon incision of the decidua innumerable small cysts are visible. Within the centre of the vesicular mass is usually found a shrivelled or distorted fœtus, surrounded by its amnion, which occasionally contains an abnormal quantity of fluid.

Occasionally no trace of an embryo is found, or only the remnants of an umbilical cord remains. The enlarged villi have a tendency to perforate either one or both deciduæ, and even encroach upon the muscular wall of the uterus.

Microscopically, the outer cellular and the inner fibrous wall of the villi will be seen, while in the interior will be stellate connective tissue cells in the interstices between which may be found mucous tissue. Disease of the endometrium or of the uterine walls (fibroid tumor) and stenosis of the umbilical vein have been found in connection with, and probably in etiological relation to, cystic degeneration of the chorionic villi, which also has been attributed to death of the fœtus or to absence of the allantois.

The Placenta.

anomalies of position.

Placenta prævia.—Playfair says: "It is far from unlikely that such an abnormal situation of the placenta may produce abortion in the earlier months, the site of its attachment passing unobserved." And Lusk states that: "It may occasion abortion, which is then characterized by the absence of pain, both previous to the hæmorrhage and during the period of expulsion. As a rule the ovum is expelled entire, without rupture of the membranes."

Anomalies of size.—Abnormal thickness of the placenta is generally due to irritation from a chronically inflamed endometrium,

resulting in hyperplasia, and it may produce hydramnion. An abnormally small placenta may be associated with an ill-developed child, or may depend upon an interstitial overgrowth with subsequent retraction.

DISEASES OF THE PLACENTA.

Œdema is generally caused by obstruction of the umbilical vein or of the veins of the fœtus.

DEGENERATION OF THE PLACENTAL VILLI.

Cellular hypertrophy, which means extensive multiplication of the cellular elements in the villi, may obliterate blood-vessels and give the placenta a hard, dense appearance (sclerosis), as is seen in syphilitic disease of the villi.

Fibrous and fatty degeneration of the placenta is extremely common. Isolated examples are found in almost every placenta. An abnormal development of fibrous tissue, which might be termed interstitial placentitis, may originate either in the decidua serotina, the placental villi, or the intervillous spaces. When the disease affects the decidua serotina, it is associated with chronic inflammation of the remainder of the endometrium (interstitial endometritis). The placenta becomes secondarily involved, and the hypertrophied decidua encroaches upon the intervillous spaces. When it affects the placental villi, the mucous tissue in the interior of the villi becomes converted into fibrous tissue, the blood-vessels become obliterated and atrophied, and the villi become more or less infiltrated with fat. If the process extends, the functions of the placenta are naturally abrogated. When it affects the intervillous spaces, the result is a sort of hepatization. The result of fibrous degeneration of the placenta, wherever the disease originates, prevents the performance of its most important vital functions, and if the pathological condition involves a large area of the organ, it must prove destructive to the fœtus. The deprivation of the blood supply determines the fatty degeneration, or in some cases amyloid degeneration, of the placental villi.

Placental syphilis may assume many different forms.

Granulation-cell infiltration of the villi and degeneration of their epithelial covering with consequent increase in size and distorted shapes are, according to Fraenkel, characteristic of syphilis, and will constantly be present if the placenta is diseased after infection of the ovum by the impregnating spermatozoa.

If the mother is infected during the fruitful coitus, there may be *endometritis placentaris*, characterized by enormous overgrowth of decidual cells or overgrowth of connective tissue as well as syphilitic disease of the villi.

Endometritis placentaris gummosa is generally the form assumed if the mother was syphilitic before conception. Then the decidual cells are enormously increased and overgrown, encroach deeply upon the intervillous spaces, and undergo in places caseous degeneration.

Fibrous nodes in the fœtal portion of the placenta may be of a syphilitic nature.

Macroscopic appearance.—If the child has been dead some time, the placenta may be almost white in appearance and soft and greasy to touch. Very often there are organized clots, showing previous hæmorrhages or thrombosis. Or there may be found nodes of a greater or less extent undergoing degenerative changes.

Consequences.—The cellular infiltration of the villi results in the obliteration of the blood-vessels. The same effect may be produced by hyperplasia of the decidua serotina. Or the destruction of the villi may be brought about by the formation of the nodular masses. All of these processes, if they invade, as is the rule, the whole area of the placenta, must of necessity be fatal to the fœtus.

Placental hæmorrhages may result in immediate abortion, and then a fresh clot of blood, sometimes occupying a very large area, will be found. If abortion is not the immediate result of the hæmorrhage, the coagula will undergo the usual changes, will become encapsulated and surrounded by a fibrous wall of varying thickness, within which may be found a reddish or brownish fluid, or the cyst may contain nothing but clear serum, while the coloring matter of the blood is deposited upon the cyst-wall or upon the surrounding villi ; or it may contain large numbers of white blood corpuscles undergoing fatty degeneration and giving rise to a liquid resembling pus. Again, the fibrin may predominate and form a mass consisting of laminated fibrin, or the clot may form a distinct neoplasm. The placental villi surrounding the extravasated blood usually undergo a fibro-fatty degeneration.

Predisposing causes are : Congestion, albuminuria, diseased condition of the placental villi, slow-moving blood current in the placental sinuses, and excess of fibrin in the blood.

The determining causes may be : Sudden powerful action of the heart, syncope (favors thrombosis), or external violence. In the

early months apoplexy is more common ; in the later months, thrombosis.

The consequences depend upon the amount of blood extravasated. Should the quantity be large, either the number of villi strangulated by the clot is so great that the fœtus is at once asphyxiated, or the escaping blood, especially in the earlier months, separates the placenta from the uterine wall with the same result.

Placental parasites.—Turner reports an epidemic of abortion on a stock-farm in Missouri, in which all pregnant mares aborted. The cause was found to be a parasitic disease of the placenta, and pure cultures of the microbes were obtained. Epidemics of abortion are also known to take place in cows.

In the mother the disease may be local or general.

Local Diseases.

Diseases of the decidua.—Acute inflammations occur especially in the course of the exanthematous diseases.

Exanthematous decidual endometritis.— Klotz reports eleven cases of measles in pregnant women, in nine of which there was premature expulsion of the fœtus. The uterine action is, according to Klotz, excited by the occurrence of an exanthema upon the uterine mucous membrane, highly irritating in its action. It is quite probable that the same condition of the uterine mucous membrane might account for abortions or premature labors that often occur, when pregnant women are attacked by any of the other eruptive fevers. Slavjansky in two cases of cholera found the decidua thickened and of a dark purplish hue, with numerous extravasations of blood throughout its substance (*hæmorrhagic decidual endometritis*). The chronic forms are more commonly met with, and are usually due to a pre-existing chronic endometritis.

Endometritis decidua chronica diffusa consists in extensive hyperplasia of the mucous membrane, and produces a membrane in thickness and density far in excess of the normal. There is great multiplication of the decidual cells, some of which are elongated and seem to be changing into connective tissue. The blood sinuses are much enlarged in the deeper portions of the membrane, and there is an abundance of connective tissue or an abundant exudation, which at first is simply amorphous or granular, but soon becomes fatty when formation of connective tissue does not take place. If the disease has a rapid course, abortion will usually result either on account of hæmorrhages into the mucous

membrane, separating it from the uterine wall, or on account of death of the embryo, from which all nourishment has been diverted to supply the greater needs of the rapidly growing decidua. In such cases the embryo may be absorbed and the deciduæ may afterward be cast off as an empty sac with greatly thickened walls, forming one variety of the so-called *fleshy moles*. Or the embryo may be destroyed in consequence of the hæmorrhage into the hypertrophied decidua, which may cause rupture of all of the membranes and escape of blood into the cavity of the ovum, as well as exteriorly into surrounding tissue, so that only with a microscope can one detect the true nature of the mass expelled. Owing to firm adhesions to the uterine wall, portions of the diseased membrane, especially the placental decidua, are apt to be retained, and endanger the health of the mother by hæmorrhages or infection.

In *endometritis decidua tuberosa et polyposa* the hyperplastic process seems to have been exaggerated in places. The whole membrane is greatly thickened and shows the same hyperplastic changes under the microscope as the former disease, but out from this stand smooth and very vascular projections of a tuberous or polypoid form, to the height of half an inch or more. In the spaces between the projections may be seen openings of the uterine glands, which are not to be found on the polypoid elevations. The polypoid proliferations consist of a strong fibrous stroma, with large lentil-shaped cells and without fatty degeneration. The arteries are surrounded in some places by thick concentric layers, while at other points the vessels are sinuous and dilated and form a wide-meshed framework. (Winckel.) In all the cases hitherto described the ovum has been expelled at the end of the second to the fourth month of pregnancy. (Schroeder.)

Catarrhal endometritis affects chiefly the glandular elements of the membrane, and results in hypersecretion of a thin watery mucus, that collects between the chorion and the decidua. This affection in the later months of pregnancy causes the familiar picture of hydrorrhœa gravidarum, and sometimes premature birth. It may reasonably be supposed to occasionally cause interruption of pregnancy in the earlier months.

Cystic endometritis is characterized by the formation of small vesicles varying in size from a pea to a hazelnut, which are filled with a clear fluid. It results when there is a hypersecretion of the uterine glands without escape of the secretion, and is a condition only found in very young ova.

I. Veit has called attention to a form of endometritis of the decidua characterized by foci of small cell infiltration, and claims that this is the most common form of decidual disease that may cause serious disturbances in pregnancy.

R. Emanuel has in Veit's private hospital observed two cases of abortion, in which the decidua vera macroscopically showed great thickness (5 to 8 mm.) and several foci of grayish-white or yellowish-white color. Microscopical examination of these foci showed great infiltration with small round cells in the form of infarcts, in which no decidual cells were visible. They also contained great numbers of cocci, in form and appearance diplococci. One of these observations was made in a case of myxoma chorii.

Emanuel had with Wittkowsky the opportunity of observing the other case in another abortion two and a half years later. The decidua vera was 2 cm. thick, brittle, and of an intense yellow color all over. Microscopically there was found infiltration with small round cells and numerous bacilli of great length, of which they obtained pure cultures, and which they and also Veit consider the etiological factor.

Atrophy of the decidua is rare. The whole or part of the placenta may be affected. In case of atrophy of the ovular decidua, the ovum may rupture and its contents be discharged. When the placental decidua is affected a slender pedicle attachment of the ovum may be the result, allowing the same to enter the cervical canal, where it may be retained for a while, producing cervical pregnancy, until finally it is expelled. Microscopically, instead of the characteristic cellular forms, numerous round or oval nuclei or isolated cells containing droplets of fat are found. The juga and vollicula of the normally developed decidua are usually absent. Extravasations of blood in spots are very often present.

Chronic metritis may be found as a cause of abortion, either on account of the rigidity of the walls not allowing the ovum to expand, or by the congestion causing hæmorrhages, that may kill the fœtus or cause contraction.

Retro-displacements of the pregnant uterus frequently terminate in abortion (Martin, 15 cases out of 41 ; May, 33 out of 150 ; Howitz, 37 out of 52).

Less frequently *prolapsus uteri* (Litten, 16 cases out of 91 ; Krause, 2 out of 10), and rarely the other displacements may cause abortion.

Lacerations of the cervix uteri deserve an important place in the

pathology of abortions, as they are frequently observed in these cases.

Uterine fibroids often cause interruption of pregnancy. (West observed 28 abortions in 36 cases ; Boehrig, 129 in 147 cases ; Lefour, 39 in 227 cases.) Fibroids of the body more frequently cause abortion ; fibroids of the cervix, premature labor.

The frequency of abortion in *cancer of the uterus* is stated at 13 per cent. *Tumors of the ovaries* not infrequently cause abortions. Of 215 cases collected by Zeller, 21 aborted ; of 321 cases collected by Remy, 75 aborted. *Tumors due to former extra-uterine pregnancies.* Of 83 such cases collected by Schuhl, 13 terminated in abortion and 5 in premature labor.

Ulcerations of the collum, subinvolution, malformation of the uterus, peritonitic adhesions, chronic diseases of the appendages, may also occasionally cause abortion, as may also inflammation of adjacent organs, particularly of the bladder and rectum. *Exaggerated irritability, uterine rigidity or atony, laxity of the collum, molimina menstrualia, and too frequent coition,* have been classed as local causes.

General Diseases of the Mother.

Intoxications with lead, mercury, bisulphide of carbon and tobacco have been observed in factories as causes of abortion. *Alcoholism* predisposes to uterine hæmorrhages and abortion.

Maternal syphilis is by all authors considered the most influential factor toward interruption of pregnancy. When no affections of the uterus or its contents can be found, it is probably justifiable to assume that the impaired nutrition and the altered condition of the blood of the mother may be sufficient to destroy the fœtus.

Scrofula.—Bourgeois found that of 52 scrofulous women married to apparently healthy men, 12, or about 25 per cent., aborted. Lugal claims that abortion is almost inevitable if both parents are suffering from scrofula.

Intermittent fever often causes premature labor, but seldom causes abortion. Of 105 cases collected by Bonfils, 61 resulted in premature labor, 12 in abortion.

Nervous diseases, such as chorea, and convulsive diseases and *skin diseases,* such as pruritis vulvæ, may rarely cause abortion.

Diseases of the urinary system.—Albuminuria (with or without nephritis) is a frequent cause of interruption of the pregnancy. According to Braun, abortion, miscarriage, or premature labor

take place in about 80 per cent. of all cases. The effect is generally the death of the fœtus, caused by the anæmia of the mother, intoxication of the system, or lesion of the placenta. *Urinary gravel.*—Abortion has sometimes been caused by the violent vomiting of renal colic. *Diabetes* may cause abortion (Duncan, 7 times in 19 pregnancies).

Disease of the digestive organs.—Prolonged attacks of diarrhœa will generally cause abortion. Constipation and intestinal parasites are also considered possible causative factors.

Disease of the circulatory system.—Heart disease frequently causes abortion, according to Schuhl in 58.87 per cent. of the cases.

Varices of the lower extremities.—It is claimed that compression of these may cause uterine hæmorrhages. Hæmorrhoids or rectal fissure may exceptionally cause abortion as the result of irritation or abundant hæmorrhages. Anæmia may be a cause, and hæmophilia is supposed to cause abortion by too active circulation in the uterus.

Under diseases of the respiratory organs, pulmonary tuberculosis may be mentioned as a cause. Accidental causes may be traumata or mental emotions.

Under *general physiological and hygienic causes* may be mentioned sedentary habit, habit of abortion, temperament (if it goes beyond the physiological limits, especially the plethoric, the lymphatic, and the nervous temperament), delicate constitution, age (too young or too old), heredity, consanguineous marriages, obesity, prolonged repose, insufficient alimentation, climate (changing from cold to hot), and high altitude.

Causes due to the Father.

Excessive coition on the part of the male has in animals been observed as a cause of abortion, and is supposed to cause alteration of the sperma

Alcoholismus causes atrophy of the testicle, alterations of the tubulæ seminiferæ and of the sperma. It is therefore not astonishing that the alcoholism of the father seems to have a retentive influence upon the progress of pregnancy. (Goubert.)

Saturnismus.—Constantin Paul collected 32 cases, in which abortion resulted 11 times.

Syphilis.—Of 103 cases collected by Fournier, 41 resulted in abortion or premature labor with dead or dying children.

Scrofula.—Pulmonary tuberculosis, cancer diathesis, albuminuria, age, and constitution may be causes.

The Modus of Elimination of the Product of Conception differs according to causes. 1. The entire ovum, together with the decidua vera and circumflexa, may be expelled even in the first months. 2. The ovum may tear off at the decidua serotina, and the decidua vera remain behind. 3. The decidua circumflexa may tear in the descent, and the ovum be born consisting of chorion, amnion, embryo and amniotic fluid only ; then the decidua vera and circumflexa with serotina follow later. 4. The chorion tears in the descent of the membranes, and the amnion only passes through without injury, and the cord tears off at the placenta without rupture of the amnion or escape of the amniotic fluid ; only after some time the detachment of the other membranes follows. In the first and second month the retention of the deciduous membranes takes place most commonly, because at this time the connection between the villi and the uterine wall is not as yet very intimate. The last-mentioned form of expulsion, in which the amnion only envelops the fœtus, is the rarest of all, but may happen even in a fœtus of four or five months.

Finally, the decidua vera and circumflexa are not infrequently found torn off in a fœtus of four to six months ; the placenta fits like a cape over a part of the fœtus, and the amnion alone is discharged intact.

When the ovum is ruptured the fœtus may be expelled, and only the deciduæ, interspersed with effusions of blood, will remain behind ; such ova have been termed "blood moles." If the entire ovum be not expelled, and portions of the deciduæ vera or placenta remain behind, the hæmorrhages continue sometimes, associated with uterine contractions. Fibrinous and so-called placental polypi are frequently formed from these remnants. They become coated over with the escaping blood, and are rounded off. New fibrinous layers are constantly deposited upon them ; the larger they become the more profuse will the metrorrhagia be, until they are detached and expelled by uterine contractions, or slough away.

A. Dührsen, according to his observations, considers the retention of parts of the decidua vera not the exception, but the rule, after abortions running a spontaneous course or treated by tamponade.

When expelled pieces of the placenta show a darker color and a firmer, harder tissue, the decidua vera is three to four times as thick as the decidua reflexa, and shows a much greater vascu-

larity. It has one smooth surface only perforated by the openings of the uterine glands, and one rough ragged surface covered with blood coagula. When the decidua reflexa remains in connection with the chorion, it passes away entire.

In regard to what part of the decidua vera is detached and what part remains, Schroeder thinks that the line of detachment runs through the cellular layer, leaving the entire glandular layer and a part of the cellular layer behind.

Langhaus states that at a normal labor the decidua is detached at the line between the cell and the ampullary layer, the ampullary layer remaining almost entire.

Leopold states that by abortions the decidua vera is detached in the ampullary layer.

A. Dührsen claims that the spontaneous loosening of the decidua vera takes place always in the glandular stratum, and especially in the deep alveolar layer. The curette detaches the decidua vera always in that same layer; it does not cause any deeper injury of the uterine walls.

In regard to the detachment and expulsion of the ovum, Dührsen says: "So long as the decidua vera and reflexa have not grown together, the labor pains will only loosen the placental attachment from the uterine wall. The ovisac passing downward will then mechanically tear the decidua vera loose from the uterine wall. But this process is incomplete, as adherent pieces of the decidua tear off and remain in the uterus. As long as the placenta is still adherent, one will never find even a small piece of decidua vera detached. It is impossible for labor pains primarily to detach the decidua vera, as it is gelatinous, and folds itself when the uterine wall contracts and gets shorter.

The mechanical detachment of the decidua vera is perhaps favored by extravasation of blood in the deepest strata of the glandular layer, but can also take place without these.

References.

I. Cohnstein: Lehrbuch der Geburtshülfe.
Karl Schroeder: Lehrbuch der Geburtshülfe.
W. S. Playfair: System of Midwifery.
William Thompson Lusk: Science and Art of Midwifery.
Franz v. Winckel: Lehrbuch der Geburtshülfe.
Barton Cooke Hirst: American System of Obstetrics.
A. Duehrsen: Arch. f. Gyn., Bd. xxxi, Heft 2, zur Pathologie und Therapie des Abortus.

F. H. Getchell : Illustrated Encyclopædia of Science and Practice of Obstetrics.

Dr. Schuhl : (Archives de tocologie et de gynécologie, Bd. xix) De l'avortement à repetition et des Moyens d'y remedier.

Egbert H Grandin : (Pædiatrics, vol. i, No. 5) Diseases of Intra-uterine Life, on the Part of the Mother.

Archiv. f. Gynäcologie, Bd. xxxvii, Heft 1 ; Bd. xl, Heft 1 ; Bd. xlvii, Heft 1, 3 ; Bd. l, Heft 3.

Zeitschrift f. Geburtshülfe u. Gynäcologie, Bd. xxv, Heft 2 ; Bd. xxviii, Heft 2 ; Bd. xxx, Heft 1 ; Bd. xxxi, Heft 1 ; Bd. xxxii, Heft 1.

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ARTIFICIAL DILATATION OF THE PARTURIENT CANAL IN LABOR.*

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In obstetric practice we are not infrequently confronted by certain disturbances in the course of labor which threaten the safety of mother or child, and these disturbances give us indications for certain operations. Such indications often present themselves before the parturient canal has been sufficiently dilated by the physiological processes of labor to enable us to safely proceed with our operative therapeusis. The indications for various operations may be identical, but each operation has its own peculiar conditions to be fulfilled. The condition that we are most likely to find unfulfilled is adequate dilatation of the lower uterine segment, the os, the vagina, and the introitus vaginæ. In this paper, accordingly, I wish to consider the artificial dilatation of these parts.

As indications for artificial dilatation of the cervix we have local inflammations which prevent or delay physiological dilatation, thus endangering the life of the mother or child. Among these inflammations are those of the cervix, produced by chronic blennorrhœa, caustic applications, syphilis, and carcinoma, which result in a hypertrophied condition of the tissues, whereby the normal processes of labor are so hampered as to greatly retard or even prevent natural expulsion of the fœtus. We also find cases,

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* Read before the Chicago Gynæcological Society, December 18, 1896.

especially in primiparæ, when without the presence of any discoverable lesion we have an extremely tardy and painful dilatation of the os. In such cases labor may have progressed well for a time, and partial dilatation of the os may even have occurred. Then the cervix becomes rigid, labor fails to advance, and the patient becomes almost unmanageable by reason of her sufferings. Such interference with labor may be due to faulty presentation of the fœtus, whereby the bag of waters does not offer its usual shape; or upon some pelvic obstruction or lack of parallelism of the uterine axis with that of the pelvic brim; or the uterine contractions may become altered in character, assuming an irregular or even a clonic form.

The commoner forms of complicated labor which require us to expedite delivery are eclampsia, placenta prævia, accidental hæmorrhage, prolapse of the cord, septic infection, and cases of dead fœtus, including delayed abortion and finally retention of placenta or membranes. In some cases, too, artificial dilatation may be required to render possible the rectification of a faulty presentation or prophylactic version in a case of contracted pelvis. Artificial dilatation has also been performed to render the fœtus accessible in cases where Cæsarean Section *in articulo mortis* would otherwise have been necessary.

The indications for artificial dilatation of the vagina are given by congenital or acquired stenoses and vaginal malformations. In the absence of pathological deformities, it may also become desirable to dilate the vagina in certain cases of slow physiological dilatation.

Finally, we must consider the indications for dilatation of the vulvar orifice. This may be required by reason of persistence of the hymen, the presence of cicatricial tissue, and, lastly, as a prophylactic measure to enable the operator to deliver the patient speedily in the face of impending danger to mother or child, and in any case where he feels that by so doing he can avoid greater injury to the perinæum and vulva than is involved in the operative measures.

We possess two methods of artificial dilatation—the one involving cutting, the other merely stretching. Dilatation by cutting: This method is applicable to cases of persistent hymen, malformations or cicatrices of vulva, vagina, and cervix, and to cases where we are not warranted in using the slower methods, as, for instance, in some cases of placenta prævia, accidental hæmorrhage, and im-

minent danger of asphyxia of the child, as in prolapse of cord. To perform this operation the cervix is exposed by means of a speculum, and steadied by one or two tenacula. With a stout elbow scissors the cervix is then deeply incised right and left, posteriorly and anteriorly. Hæmorrhage is apt to be quite profuse for a few moments, but seldom requires measures for its arrest. After delivery of the child the cut surfaces may be united by sutures or left to themselves if the hæmorrhage has ceased, but it is generally best to use the sutures. This method has yielded excellent results, but is not a favorite one with me. I have seen cases where the extraction of the child through a cervix treated in this manner resulted in extending the length of the wounded surfaces to a dangerous degree. A less radical cutting method, and one that will doubtless yield good results in some cases, is that of numerous superficial incisions around the os.

To produce artificial dilatation of the soft parts by stretching we have a variety of plans at our disposal, such as the tampon, rubber bags of the Barnes, Braun, Tarnier, McLean, and Champetier de Ribes patterns; the graduated bougies of Hegar, and the steel dilators, such as Goodell's, Tarnier's, etc. In certain cases also the laminaria tents are very convenient. The bougies and the steel dilators, are rapid working instruments, and when carefully employed serve their purpose well. For such work as the dilatation of the os in cases of abortion, and particularly to stretch the os some time after abortion has taken place, for the purpose of removing retained portions of the membranes, the bougies are very applicable, for they act quickly and with little danger of lacerating the tissues—they are greatly in vogue in Germany. The instrument called Tarnier's *écarteur* is applicable in cases at or near term. It consists of three steel branches thirteen inches long, with the distal ends flattened and bent over to prevent them from slipping out of the cervical canal. After introducing the blades separately, and adapting them to each other at the pivotal point, the dilating force is supplied by means of a rubber band, which, when slipped over the handles, keeps up a gentle continuous pressure which can scarcely do injury in any case. I have used this instrument with most excellent results in cases of tardy and painful dilatation of the os, and in some cases have been assured by the patient that, far from increasing the pain suffered, it has actually mitigated it.

The tampon has long been used in cases of uterine hæmor-

rhage, as in placenta prævia, mainly, I presume, with a view to arrest the hæmorrhage, but it also possesses very considerable dilating power both directly and indirectly—directly by the mechanical distension of the vagina, whereby the os is also dilated ; and indirectly by exciting uterine contractions. I have used it and seen it used in a very large number of cases, and am at present even better satisfied with its action than formerly. The simplest and safest tampon is one made of gauze, preferably iodoform gauze. This kind of a tampon is very readily introduced and withdrawn, while the iodoform possesses both antiseptic and hæmostatic qualities. It should be used in long strips, and in this form can be readily introduced without the use of the speculum, two fingers of the left hand being used as a guide. The gauze should be packed in very tightly, and may safely be allowed to remain as long as twelve hours. I have seen it used in this wise in the pre paratory treatment of placenta prævia, when it generally sufficed to arrest even severe hæmorrhage, and after remaining in the vagina for a few hours sufficient dilatation was usually obtained to permit the operator to advance with extraction of the fœtus.

The Braun colpeurynter was used by its inventor only in the vagina—the extension of its use to the lower uterine segment is due to Schauta of Vienna. Like all rubber dilators, it has but little direct dilating force, for if constricted at any point it simply elongates, taking on a sausage-like shape. Its dilating force may be increased somewhat by the exertion of continuous traction while the instrument is *in situ*. In Chrobak's Clinic, in Vienna, it is never used in the uterus. Schauta, on the contrary, sometimes employs it within the uterus in cases of placenta prævia lateralis, but not in the marginal form, for fear of increasing hæmorrhage by further detachment of the placenta. In the central variety, however, he advises to perforate the placenta and then introduce the colpeurynter, which then serves to press directly down on the placenta, and thus arrest the hæmorrhage.

I do not mean to discuss the treatment of placenta prævia at this time except in an incidental manner, but I cannot entirely avoid the subject, because it is in these very cases that we are especially concerned to secure rapid cervical dilatation. The best of all tampons in placenta prævia is that supplied by the leg of the fœtus drawn down until it projects beyond the vulva ; but as a dilator it is a partial failure in that it does not act quickly, for by this method of treatment version is regarded as completed when

one has pulled down the leg, and the expulsion of the child is left to the natural forces. So far as the mother is concerned, the results obtained by this method of treating placenta prævia are most excellent; but the fœtal mortality is quite enormous, and if we consider the child's life, as we certainly should do, we must not confine ourselves to this mode of treatment. Of the rubber dilators, that of Champetier de Ribes is undoubtedly the best. It is composed of a silk bag covered with rubber; the silk prevents overdistension, and the rubber enables us to secure proper disinfection of the instrument. The rigidity of the tube to which it is attached facilitates its introduction, and makes it a most convenient instrument. In some cases we shall fail to secure sufficiently rapid dilatation by means of the rubber dilators, and in such cases may have to resort to other methods, as dilatation by means of the hand. Two years ago Dr. P. A. Harris described a method of manual dilatation that would appear to be useful. By this method the index is first used, then the tip of the thumb is introduced just within the os, after which the first, second, third, fourth, and fifth fingers are successively introduced, the thumb meanwhile being employed to make extension, while counter-extension is made by the fingers. Dilatation of the os, whether made by the fingers or by any other method, usually increases uterine contractions, but sometimes this is not the case. In one instance, when I failed to awaken uterine contractions by means of a Barnes' bag in the cervix, I introduced a second bag into the vagina, and when this was distended uterine activity was soon manifested, the introduction of the vaginal bag thus acting indirectly as a uterine dilator.

For a number of years past I have from time to time used the rubber bag of Barnes to distend the walls of the vagina, doing this sometimes as preparatory to version in placenta prævia, and at other times merely as a means of expediting labor in tardy and painful cases. When the first stage is greatly prolonged the patient may become quite exhausted before the os has stretched to any considerable extent, and while the vagina is still less prepared for the passage of the child. In a number of such cases I have introduced a Barnes' bag into the vagina and distended it with from twelve to sixteen ounces of water. As a rule such a procedure has materially increased both the force and efficiency of the uterine contractions, the patient meanwhile making but little complaint of the bag. The latter acts just as the protruding membranes should do—it produces gradual dilatation of the vagina,

softening the perinæum, and increasing the vaginal secretions. The bag is allowed to remain until expelled by the uterine contractions, and if only moderately distended at first, I sometimes reintroduce it and allow it to be expelled a second time, after which the perinæum is found to be perfectly softened and easily distended, whereby the second stage of labor is rendered much less pain ful and protracted than it would otherwise be. I believe the safety of the perinæum is greatly enhanced by such treatment, and can conceive of no reason why the plan may not be employed in numerous cases with the best of results, provided it be used with prudent hands. In using the rubber bags certain precautions should always be taken : thus the bag should first be distended with sterilized water until it has reached the desired size to prove the integrity of the instrument, and to enable us to know just how much water to use after the bag has been placed *in situ*. To make this amount perfectly definite, the quantity of water used in the trial test should be accurately measured, and subsequently the same amount should be used. The best way to introduce the water is by means of Davidson's syringe, which should be worked very slowly, care being also taken to exclude air. Of course the most precise pains should be taken to secure an absolutely sterilized bag. In using the bags to dilate in cases of placenta prævia, we should always bear in mind the dangers of embolism in such cases, for the placental site is so much exposed that the opportunities for such accidents must certainly be greater than in ordinary cases.

Some authorities claim that there is only one legitimate method of vaginal dilatation, and that the cutting one ; but after a pretty extensive experience with the plan I have just described, I feel like recommending it to you for further trial, as in my own hands it has often yielded brilliant results.

The proper employment of episiotomy is, I believe, a great aid to us in our obstetrical practice. Its indications can only be learned by experience ; but if I were to formulate a rule for novices in obstetrics, I would say : Wait patiently ; restrain the advance of the head ; give the perinæum ample time to stretch, allowing the head to advance only millimetre by millimetre, keeping the perinæum carefully in view all the time, and then if the mucous membrane is seen to give way at a time when the head has not yet engaged in the vulva with its greatest diameter, push back the head, and make a one-sided episiotomy. If this be done as soon as the faintest sign is seen of perineal laceration, I believe the perinæum

proper may be saved from further damage, in most cases greatly to the patient's benefit.

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WHEN SHALL WE USE THE FORCEPS?*

By William E. Parke, M.D., Philadelphia.

I shall endeavor in this brief article to formulate some rules respecting the use of the forceps in ordinary obstetric work without entering at all into the discussion of disputed questions concerning their use, such as the choice between forceps, version, and symphyseotomy. There is undoubtedly a wide difference in the practice of different physicians in regard to the time and frequency with which the forceps are used. Some resort to them early and often, while others delay their use until an exhausted patient warns them that something must be done to terminate labor. I recall as a student the frequency in our clinical instruction with which a lacerated birth canal was charged to the hasty use of the forceps; so that as a recent graduate I felt that the forceps was a formidable and dangerous instrument, and that it should not be used except as a last resort and in rare instances.

I shall assume in these remarks that the operator is competent, and that no positive contra-indication to the use of the forceps is present. In order to determine when the forceps may properly be used, it is important to consider the course of a normal labor, and the ill consequences of a too rapid as well as a too slow delivery. That there is a great difference in the length of practically normal labors is a fact painfully familiar to the obstetrician. It may be stated in a general way, however, that the duration of labor in primiparæ is considerably longer than in multiparæ, and that the first stage of labor is much longer than the second. Playfair states that the first stage is to the second as four or five to one, and Penrose that the first stage is five sixths and the second stage one eighth of the labor. This relationship, however, is constantly altered. A long first stage may be followed by a short second stage, and *vice versa*. Spiegelberg's figures, in 506 cases quoted by Dickinson in "An American Text-Book of Obstetrics," are as follows:

* Read before the Philadelphia Obstetrical Society, December 3, 1896.

Duration of labor in primiparæ, dilatation stage.	15 hours.
Expulsion stage.....	2 "
Duration of labor in multiparæ, dilatation stage.	8 "
Expulsion stage.....	1 hour.

I have found, in looking over the record of 1200 cases of natural labor in the Philadelphia Lying-in Charity, of which 792 were primiparæ and 408 multiparæ, that the average duration of labor in primiparæ for the first stage was thirteen hours and nine minutes, and of the second one hour and forty-nine minutes, while for multiparæ the duration of labor for the first stage was eight hours and forty-eight minutes, and for the second stage one hour and fifteen minutes. These figures, compared with those of Spiegelberg, show a slight decrease in the duration of labor in primiparæ and a slight increase in that of multiparæ. I noted also in these cases, without having kept a precise record of them, that the perinæum was torn in a great majority of cases, in which the second stage of labor was considerably longer than the average, thus pointing to the fact that a prolonged second stage does not prevent the perinæum from being torn. It is, indeed, more liable to tear on account of the œdema which occurs in a prolonged expulsion stage. During the first stage of labor, so long as the bag of waters remains unruptured, the indication for interference is naturally long delayed, or does not occur at all; and if necessary is to be determined by the condition of the mother. If the pains are so severe and prolonged as to interfere with the rest and nourishment of the patient, and the os does not dilate nor the bag of waters rupture, anodynes are indicated. If, however, the waters have escaped and no progress is made and the mother is becoming exhausted, or the child's pulsations grow very rapid or slow and weak, it is proper to dilate the os sufficiently to admit the forceps and apply them. The time when this should be done is not to be specified in hours, but is to be determined by the condition of the mother and child. Owing to the injury which may result to the cervix, and even to the uterus, their use should be delayed until an increasing pulse or temperature or nervous exhaustion demands early relief. In addition to this, it is proper to apply the forceps during the first stage of labor for accidents, notably in certain cases of convulsions, placentæ prævíæ and prolapse of the cord, at whatever time these complications may arise.

It is at the end of the first stage and during the second stage

that the forceps are of the greatest utility. When the os has become fully dilated labor progresses promptly in the normal course of events. The bag of waters breaks, and the presenting part advances through the soft parts with a greater or less rapidity, determined by the rigidity of the parts, the relation between the passage and passenger, and the force of contraction. We have seen above that the average duration of the expulsion stage in primiparæ is about two hours, and in multiparæ is about one hour. When, therefore, labor is delayed beyond these limits, we must learn the reason for it, and consider the evil consequences of delay. This question concerns both mother and child. A protracted labor tires out the mother, a prolonged second stage being especially injurious to both mother and child. In this stage each pain is attended by voluntary efforts on the part of the mother. These prolonged and oft repeated bring about anxiety and exhaustion of the mother and favor post-partum hæmorrhage from fatigue of the uterine muscle. Then there are the ill consequences due to pressure of the head upon the soft tissues of the mother. These are: *Pain*, both local and extending along the course of the nerves. *Œdema* of the soft parts below the point of pressure, thus reducing the vitality of the tissues, and favoring laceration and infection. *Paralysis*, due not only to the immediate effects of pressure, but also to a subsequent neuritis. *Sloughing*, with the distressing sequel of vesico-vaginal or recto-vaginal fistula.

The injuries to the child resulting from pressure vary, of course, with the length of the time and the degree of pressure. They may be trifling, as extensive *caput succedanæum* and *slight asphyxia*, or grave, as *intra cranial hæmorrhage*, resulting in death, or subsequent failure of physical or intellectual development, and *fatal asphyxia* from separation of the placenta before the birth of the child.

What advantages are to be gained by mother or child in a protracted labor? As for the child, the sooner it is delivered the better; nothing is to be gained by waiting, although an average amount of delay does it no material injury. The mother, on the other hand, must have the birth canal dilated sufficiently to admit of the passage of the child. This process requires time, in order that the soft parts may yield to the advancing head without lacerating. A too rapid delivery may be followed by a tear of the birth canal, while too slow a one is liable to result in the injuries detailed above to both mother and child. Broadly speaking, it

may be affirmed that (1) when the os is fully dilated, all delay beyond the average time for delivery is attended with increasing danger both to mother and child, and (2) whenever labor is delayed beyond the average time, and is at the same time possible in the natural way, it is because of the lack of propelling force—in the one instance an insufficient force to overcome normal resistance, and in the other an insufficient force to overcome abnormal resistance. The first has been called inertia uteri, and is the cause of the majority of all cases of delayed labor. Under these circumstances the pelvis may be roomy, the head of the child not unduly compressed, and the mother showing no marked signs of fatigue, so that to do nothing in the matter would not be culpable. Yet why should the anxiety of the mother be prolonged when we have means at hand to curtail it ? The forceps may be used to induce uterine action—for they act as a stimulant by their mere presence—and to supply simply the force needed to overcome normal resistance, and thus terminate labor in an average period of time, and not for the purpose of bringing about a hasty delivery. When, therefore, the dilatation stage is complete, and the head makes no material advance in one half hour, though there exists no disproportion between the child and the passage, it is proper to employ the forceps.

When, however, there exists a somewhat contracted birth canal or a slightly enlarged head, a distinct advantage is to be gained by waiting a certain time for the moulding of the head to occur. The first evidence of subsiding pains or increase of temperature or pulse indicate the use of the forceps, and their use should rarely be deferred beyond two hours if the head ceases to advance. In such cases it should be noted whether the head recedes after a pain, because when it remains stationary for a considerable time sloughing from pressure will result. If, then, the head neither advances with a pain nor recedes after it, the forceps cannot be applied too soon.

It is recognized that the rule of treating each case upon its own merits nowhere finds better application than in obstetrical work, and also that no single rule can be laid down to apply to all cases. It is, on the other hand, desirable to have some general rules for our guidance in this work, and the ones I have suggested seem to me suitable for a working basis.

Summary :

1. The indication for the use of the forceps rarely or never

arises during the first stage of labor, before the membranes have been ruptured.

2. It may be necessary to employ the forceps during the first stage, when the waters have escaped, on account of the increasing exhaustion of mother or child.

3. It is proper to apply the forceps during the first stage of labor for accidents, whenever they may arise, notably in certain cases of convulsions, placentæ prævіæ, and prolapse of the cord.

4. In the second stage it is proper to apply the forceps one half hour after the head ceases to advance, when there is no disproportion between the passage and passenger.

5. When, however, there is a tight fit between the child and the birth canal, the use of the forceps may be delayed. This delay should rarely exceed two hours after the head ceases to advance.

6. If the head is engaged, and neither advances with a pain nor recedes after the pain, the forceps should be applied promptly.

1709 North Seventeenth Street.

THE CHANGES IN THE UTERINE MUCOSA DURING PREGNANCY, AND IN THE ATTACHED FŒTAL STRUCTURES.

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Introduction.

There is no department of embryology in which greater differences of opinions exist than in that which is the subject of this research. Recent investigations, instead of harmonizing divergent views, have only tended to aggravate dissension.

This state of matters is due to several causes. In the first place, there is a prevailing tendency among certain workers to accept as unquestionable and beyond challenge statements made by older investigators of great renown. *Parva sub ingenti* is a motto worthy of constant attention, but its strict application in

scientific research is not likely to be followed by the best results. Much as we are indebted to the pioneers in embryological work for their minute descriptions of macroscopic appearances, we are forced to regard many of their accounts of microscopic relationships as of secondary importance. Indeed, in several instances their value can only be estimated in terms of the fallacies which have been spread broadcast by their publication. We have passed beyond the era of the dissecting-knife and hand-lens, and have learned the value of special methods of hardening and examining embryonic tissues.

Another fertile source of trouble is the prevalent baneful habit of establishing sweeping generalizations from facts derived from the study of single specimens. It is as reasonable to write the whole history of America from a study of President Lincoln's administration as to explain the development of the placenta from the examination of, say, a three months' pregnant uterus. It is necessary to make a comparison of different stages. But, more than this, no satisfactory work can be done in human embryology unless a careful phylogenetic study be carried on at the same time. An embryologist who confines himself to the human embryo works without the key to the solution of many difficulties, and is consequently forced to have recourse to specious speculation.

One must also mention the hurtful influence of party or national bias in the discussion of scientific problems. The causes of this unfortunate complication are not to be easily explained. It is apt to be manifested especially among younger investigators. Thus, the department of embryological research, with which I am particularly concerned, has become, even in its widest mammalian relationships, a fierce battleground, the contending parties being, on the one hand, the Teutonic host, and, on the other, a triple alliance of French, Belgians, and Dutch; a few British and Americans being found with both parties.

As a result of this state of matters, confusion is being worse confounded, and, in addition, owing to lack of uniformity as regards nomenclature, new investigators find it difficult to assign to the different published works their proper proportional values, or to correlate them in an intelligible synthesis.

Very recently attempts have been made to establish the pathology of the so-called "Deciduoma Malignum." I am safe in saying that no microscopic examinations of any tissue in the body have given rise to so many different interpretations and explana-

tions. For example, in regard to one set of cells described, some observers think that they are maternal in origin ; others that they are fœtal. Some think they are in no way connected with the influence of pregnancy, but are due to degeneration in the new growth ; others think they are entirely related to the influence of gestation. There are also differences of opinion as to whether they are of epiblastic or mesoblastic origin. These differences must be related primarily to the faults of embryologists ; they are mainly accountable for the confusion of the pathologists. "Deciduoma malignum" will be a *casus belli* just as long as the embryologists differ in regard to the normal changes in the decidua and in the attached fœtal structures.

In the course of my investigations, which have been carried on during the past seven years, I have examined the pregnant uterus during the second, third, fourth, fifth, sixth, eighth, and ninth months, in the first and second stages of labor, and during the various stages of the puerperium. In addition, I have studied a number of complete abortions in the early weeks, as well as the placenta and membranes in the later months of pregnancy. I have also examined the pregnant uterus in various stages in the mouse, rat, rabbit, guinea-pig, sheep, and cow. I have also made a careful study of the normal mucosa of the corpus uteri in the non-pregnant state for the purpose of demonstrating clearly certain facts which must be emphasized in order rightly to appreciate the changes which occur during pregnancy.

With the aid of the assistant in the Laboratory of the Royal College of Physicians, Edinburgh, where my work has been carried out, I have taken a large number of microphotographs—about two hundred and fifty. The difficulty of preparing them was great, owing to the many serial sections which had to be examined and to the troublesome details of the technique. I consider, however, that I am repaid for my trouble in being able to publish such a large series of illustrations demonstrating the changes in the decidua and attached fœtal structures throughout the greater part of the gestation period. It is the first time that microphotography has been employed on such a large scale in embryological work.

To those of my former colleagues in the University and in the School of Medicine, Edinburgh, to whom I am indebted for several specimens, and from whose criticism I have often benefited, I desire to express my deepest gratitude. In particular would I thank Dr. Noel Paton, Superintendent of the Laboratory of the Royal Col-

lege of Physicians, Drs. Berry Hart and Lovell Gulland, and the other co-workers with whom it has been my privilege to be associated in the laboratory during the last seven years.

My work is described under the following headings :

1. The Mucous Membrane of the Corpus Uteri.
2. Decidua Vera.
3. Decidua Reflexa.
4. Decidua Serotina.
5. Nature of the Progressive Changes in the Decidua.
6. Early Relations between the Ovum and Decidua.
7. Chorion.
8. Intervillous Circulation.
9. Amnion.
10. Plane of Separation of the Ovum.

Preliminary Note on the Structure of the Mucous Membrane of the Corpus Uteri.

The mucosa of the body of the adult uterus has, when examined fresh between the menstrual periods, a fairly smooth surface, and is of a grayish pink color. With a low magnifying glass numerous small pits, the openings of glands, can be seen. These vary in number in different places. On microscopic examination, the thickness of the mucosa is found to vary considerably in different parts. In my specimens it varied from 1 to 4 mm. The average thickness is probably something between 2 and 3 mm. In detail the mucosa is best described under the following headings :

Lining Epithelium.

Glands.

Interglandular Tissue.

Lining Epithelium.

This consists of columnar ciliated cells. Their nuclei are mostly elongated in the direction of the long axis of the cell ; they are like short rods with rounded ends. Many are oval or ovoid ; a few are rounded. For the most part they are placed in the deeper portions of the cells, only a small amount of cell substance being below them ; sometimes the nucleus is quite close to the margin. In some cases it is situated in the middle or outer division of the cell. The height of the cells varies. This variation is due to the differences in the amount of cell substance, or of nuclear

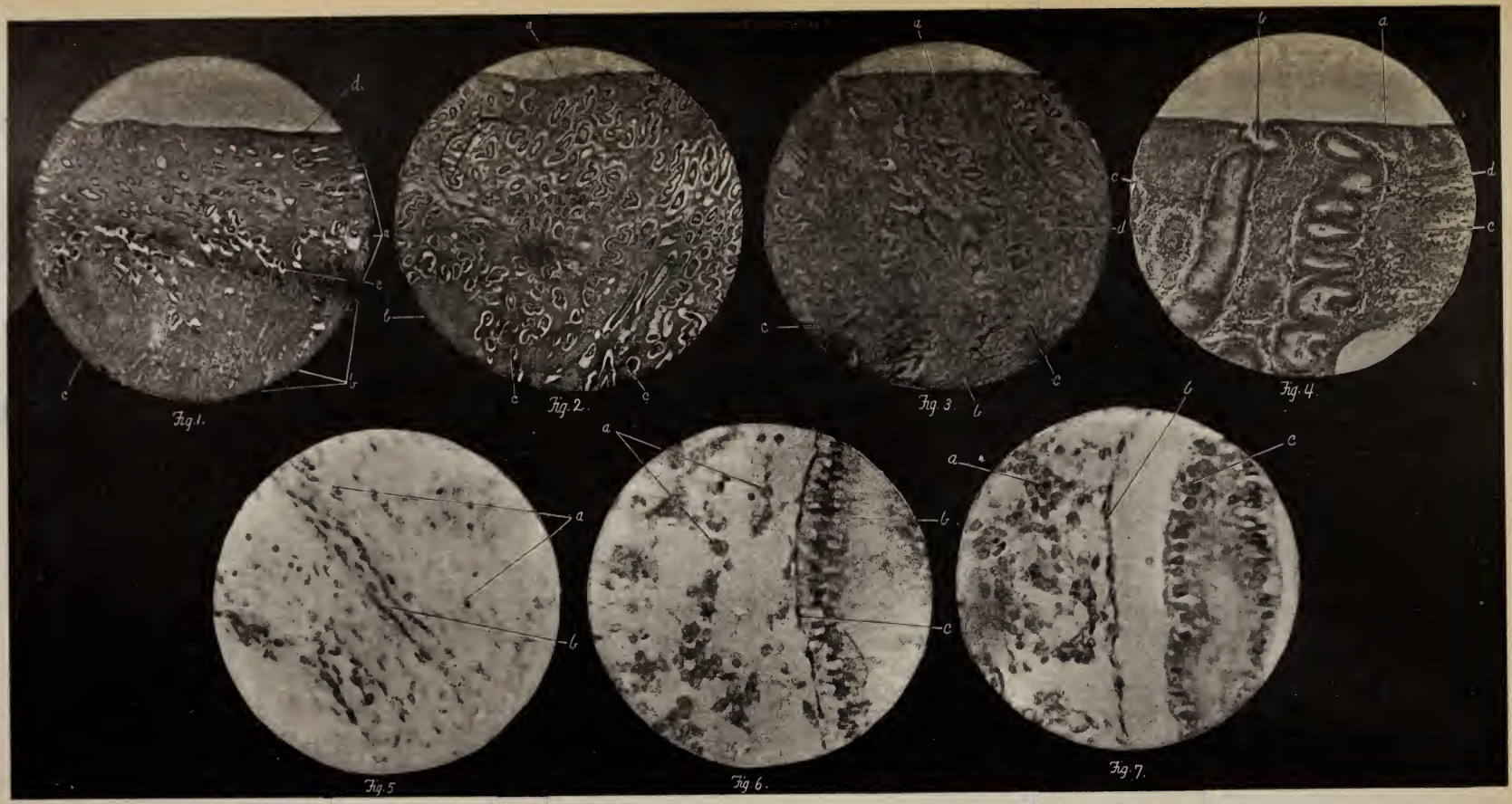

FIG. 1. NORMAL UTERINE MUCOSA OF ADULT.

a, mucosa; *b*, muscular wall of uterus; *c*, glands; *d*, surface of mucosa.

Note the irregular line of junction of mucosa and muscle and the extension downward into the taller of several glands. No longitudinal sections of glands are seen in this section. X. 40.

FIG. 2. ANOTHER SECTION OF THE SAME.

Note that the mucosa is thicker than in Fig. 1, and that the glands are more numerous. Several glands are divided longitudinally. X. 40.

FIG. 3. ANOTHER SECTION OF THE SAME.

a, surface of mucosa; *b*, muscular part of wall; *c*, lower ends of glands; *d*, wavy course of gland.

Fewer glands are seen than in Fig. 2. The wavy or tortuous course of several glands is well seen. X. 40.

FIG. 4. OUTER PART OF MUCOSA.

a, surface columnar epithelium under which a fine dark line, the basement membrane, may be seen; *b*, basement membrane; *c*, glandular epithelium which is separated from its own basement membrane. X. 80.

FIG. 5. INTERGLANDULAR TISSUE.

a, cells of various sizes; *b*, capillary vessel. X. 300.

FIG. 6.—PART OF A GLAND AND INTERGLANDULAR TISSUE.

a, cells of interglandular tissue; *b*, columnar epithelium of gland; *c*, basement membrane of glandular epithelium. It is of connective tissue origin. X. 300.

FIG. 7. ANOTHER SECTION OF THE SAME.

a, cells of interglandular tissue; *b*, basement membrane of gland; *c*, glandular epithelium which is separated from its basement membrane. X. 300.

material. In many places small cells are found between the bases of the large fully formed cells.

In many carefully prepared thin sections a layer of flattened connective tissue cells, belonging to the interglandular tissue, can generally be recognized, adhering closely to the under surface of the layer of columnar epithelium. It is to be regarded as a basement membrane. In some specimens it cannot be distinguished.

Glands.

The glands are not uniformly distributed, being more abundant in some parts than in others. They are tubular, and are single or branched. The number of branchings is usually only two or three; possibly, sometimes, more may be found. The divisions occur mainly in the deepest portion of the mucosa; sometimes in the outermost portions, even close to the surface. Very often they occur about the middle of the mucosa.

Most of the glands run obliquely to the surface, some being found, occasionally, almost parallel with the surface. A few only run at right angles to it.

Some are straight, others slightly curved. Most are more or less tortuous or wavy. Of the latter, most are straight near the surface, but a few are wavy in their whole extent. On transverse section the glands are round or somewhat oval.

Most of the glands extend to the muscular part of the uterine wall; some reaching it, others stopping a little short of it. Here and there glands extend into the muscular layer for varying distances.

The gland epithelium is of the same nature as that lining the surface of the mucosa, though, on the average, its cells appear to be a little larger. The size of the epithelium varies in different glands. When a surface view is obtained, the outlines of the cell-ends appear to be more or less rounded, though some are quite irregular.

Interglandular Tissue.

This forms the main portion of the mucosa. Its line of junction with the muscle of the uterine wall is an irregular one. Muscular projections of different lengths extend into the deep portions of the mucosa.

It is composed of connective tissue of a low or embryonic type. It is best described as mainly consisting of delicate anastomosing

nucleated masses of protoplasm. In some parts it is like a network with well-marked spaces, the anastomosing filaments being very fine. In other parts the matrix is almost a homogeneous mucoid-like mass containing rounded nuclei, very few spaces being seen, or scarcely any differentiation into distinct cells. In general, however, more or less distinction exists between the cells, though, for the most part, they remain connected by strands of matrix of various sizes. Close to the surface of the mucosa, the cells are usually flattened parallel to it. The larger the cells, the more elongated they are.

The nuclei are rounded or oval in general, the matrix surrounding them being irregular in shape and possessing one or more branching processes. Here and there groups of cells are found which are rounded, oval, or spindle-shaped, with no anastomoses. Often the nuclei may be seen dividing. (This embryonic appearance of the interglandular tissue becomes more or less altered in chronic endometritis.)

Close to the epithelium of the glands and to that of the surface is a layer of flattened cells forming a basement membrane. To it the epithelium appears to be attached.

Arteries and veins extend from the muscular part of the wall into the mucosa for varying distances. The former run a tortuous or wavy course usually ; the latter a straighter course. At what level they pass into the capillaries which supply the outer layer of the mucosa it is difficult to say. As a rule this seems to take place just outside the middle part of the mucosa. In the outer part I can only find capillary vessels, mere tubes of flattened endothelium. Occasionally a small arteriole with scarcely any wall outside the endothelium may be found in the outer portion of the mucosa. In some cases the capillary wall may have one or more layers of flattened cells of the interglandular tissue surrounding it. It is this appearance which has often been wrongly described by observers, who have supposed the vessels to be arteries. Arteries occur only exceptionally in the outer mucosal region. There, it is chiefly capillaries that are found.

According to Minot, the capillaries form a network around the glands. If he means that a special vascular mesh is particularly noticeable around them, I cannot agree with him. They are found no more numerously near the glands than in any other part of the interglandular tissue, in which they are distributed in no uniform manner.

As to the lymphatics, I am in agreement with Leopold. The spaces in the interglandular stroma contain lymph, and they are drained by lymphatics proper, which begin in the deeper layers of the mucosa or in the muscle. In these spaces leucocytes are found, varying greatly in numbers in different parts.

In conclusion, I would point out that the mucosa might well be described in terms which are generally only used in reference to the altered condition of pregnancy—viz., compact and spongy ; the former being the outermost portion, in which the glands have not, for the most part, begun to divide, and the latter being the deeper portion, in which are the branchings of the glands. Strictly, the spongy layer might be considered as consisting of two parts, an outer and a deeper, the latter being that next the muscle containing the most numerous gland spaces.

The following points regarding the mucosa of the body of the uterus should be kept in view :

1. Its thickness is not uniform, but varies considerably.

2. The superficial epithelial cells show variations in height, thickness, shape, size, and in the position of their nuclei.

3. The same may be said of the epithelial cells lining the glands. In general these are larger than the surface cells.

4. The interglandular connective tissue is mainly embryonic in nature, consisting of a nucleated protoplasmic reticulum. Here and there are found all stages of transformation to the more advanced spindle-shaped cells.

5. The connective tissue cells nearest the surface of the mucosa are arranged, for the most part, parallel to it. A special layer of these, arranged as a basement membrane under the surface epithelium, can be distinctly seen in many places. Outside the epithelium of the glands a basement membrane is also found.

6. In the superficial portions of the mucosa, the capillary junctions of the arteries and veins are the only vessels usually found.

7. The line of junction of mucosa and muscular wall is an irregular one. There is no special muscularis mucosæ.

(*To be continued.*)

TO CONTRIBUTORS AND SUBSCRIBERS.

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EDITORIAL.

THE GRAD LIGATURE.

We advise our readers carefully to peruse the leading article in this number of the JOURNAL, to study and master the simple mechanical principle underlying the application of the Grad Ligature and to put its usefulness to the test at the first opportunity.

We have no hesitation in saying that we consider Dr. Grad's article the most original that has ever appeared in this JOURNAL. His device is so simple in form, so easy to use, so perfect in principle and of such wide application in surgery that the profession is to be congratulated that it has received so valuable an addition to its *armamentarium*. Although Dr. Grad's object in inventing this ligature was to obviate the difficulty in removing the long sutures left in position and carried into the vagina after hysterectomy, with through and through drainage, but little study is required to show that it is equally available in every form of silk suture where drainage is at the same time sought. It is not a question here of

the advisability of employing the long removable suture or the buried suture ; with the latter the Grad Ligature has, naturally, nothing whatever to do. Its entire purpose is to remove easily and effectually, *in situ*, all *removable* silk sutures. This it does so perfectly, and with so little disturbance of the parts which were tied, with so little traction upon them—a matter of the greatest importance where large vessels are concerned—that we experience a feeling of gratitude and relief both for ourselves and for our patients when, having removed our sutures by this method, say in a vaginal hysterectomy, we turn from the memory of the hauling and the dragging upon stinking sutures for weeks and even months, the daily suffering of the patient, the anxiety and trouble to ourselves, the sloughing pedicles and the not infrequent abscesses at the site of operation.

Not only is this ligature useful in gynæcological operations but it is equally applicable in general surgery wherever the specific conditions of its use prevail. We do not believe that the theoretical objection that the Grad Ligature demands a largely increased amount of suture material, and that this is an added element of danger from sepsis, is of any practical importance ; a single suture is as capable of carrying infection as a dozen and, moreover, as drainage or communication with the outside air is always contemplated in the use of the ligature, this latter effect is much enhanced by the increased strands of silk.

We hope that our readers will give it a speedy and a fair trial and that they will communicate the results of their experience with that open mind and generous appreciation of good work, by whomsoever accomplished, which is not only the distinguishing mark of a *man* but is also the special prerogative of our profession.

We will gladly give space in the columns of this JOURNAL to all communications upon the subject of the Grad Ligature.

THE MEDICAL PROFESSION AND MEDICAL PUBLISHERS.

We call our readers' attention to an important and very significant communication from Dr. Gould, of Philadelphia, editor of The American Year-Book of Medicine and Surgery :

Our correspondent says : "Messrs. William Wood & Company, Publishers, of New York, refuse to permit the editors of 'The American Year-Book of Medicine and Surgery' to use in our abstracts of Medical Progress articles and illustrations first printed in the *Medical Record* and the *American Journal of Obstetrics*" and he appeals to the judgment of the profession for support in his contention that this action on the part of the publishers in question is arbitrary, outrageous and inimical to the interests of medical literature.

In answer to further inquiry, Dr. Gould assures us that in this refusal of Mr. William Wood there was no question of giving proper acknowledgment to the journals from which these abstracts were taken and we know from personal experience that credit is always given by the editors in question. The bald facts are simply these : William Wood refused, by virtue of his copyright, to permit the reproduction, in the Year-Book abstracts, of all illustrations which had appeared in the two journals already quoted, although these illustrations were frequently necessary for the elucidation of the text, and he has, moreover, made every endeavor to prevent the use of the bare abstracts themselves. His purpose was, so far as he could compass it, to prohibit the dissemination of medical literature except through the limited channels at his own command.

The use and value of the copyright in medical journalism is necessary and of equal importance to the medical profession and to medical publishers. Without it no journal could exist and no medical work even could be published except at the author's expense. This is so self-evident, from a business point of view, that it is outside the scope of discussion ; but an observance of the *spirit* of the law of copyright has proved quite sufficient for the protection of medical publishers. So deeply impressed have the latter been by the universal and constant public opinion of the profession, so thoroughly have they realized the law that to every-

thing medical, whether original in our day or a heritage from our predecessors, every reputable physician has equal prescriptive right and title, that they have never acted upon the *letter* of the law. Never to our knowledge, heretofore, has any other publishing house dared thus to defy, for the sake of a short-sighted mercenary policy, public sentiment which is and has always been a fundamental distinction of our profession.

The first lesson learnt by the medical neophyte, a lesson which he must put in practice throughout his professional life, is that of *community of goods: From the profession we have freely received; to the profession we will freely give!* In the light of this unalterable spirit the lot of any layman, who earns his bread by catering to medical needs and is yet fatuous enough to place himself in opposition, is indeed a pitiable one. But we must do Mr. William Wood the justice to acknowledge that, whatever our indignation may lead us to think of his action in regard to "The American Year-Book," he has at least the merit of consistency. We are therefore not surprised at the very just cause of complaint which Dr. Gould presents for our verdict and our protest. The publishing house of William Wood & Company is very well known in New York, especially among the older medical authors, who are not likely to forget his consistency of action during the twenty odd years when this publisher had practically a monopoly of gynæcological journalism.

To one point in Dr. Gould's appeal we must take exception. He suggests as a remedy that writers of original articles should insist upon a written agreement with their publishers that "the right of abstracting the text or reproducing illustrations is guaranteed." Is not this much like training a Gatling gun upon a flock of sparrows? The medical profession has no quarrel with medical publishers as a class. On the contrary, we believe it owes them much. They have recognized willingly medical ethics and have been just and even generous to their patrons. We know of but one medical publisher whose business instinct is so narrow and so short-sighted that he "quarrels with his bread and butter." That Mr. William Wood deserves a lesson is undoubted; but why include all publishers, who are quite free of offence, in this rebuke? There is a much simpler way. Let the profession appeal to Mr. William Wood directly, in the only manner which is likely to bring him to reason and to produce an enduring effect—his pocket.

ECTROPION COUNTERFEITING LACERATION OF THE CERVIX UTERI IN THE NULLIPARA.

In the paper which presents a series of this rather rare condition and which we publish in this issue of the JOURNAL, Dr. Noble, of Philadelphia, brings up the important and interesting question of the relation of this disease to medical jurisprudence. He expresses no positive knowledge in regard to its ætiology but hazards the suggestion that it may be due to an inflammatory condition external to the site of the ectropion.

As throwing a clear light upon the question of ætiology and as equally pertinent, by way of corollary, to the medico-legal importance of this disease, we will quote in full a case which Dr. Emmet describes in the third edition of his "Principles and Practice of Gynæcology," published in 1884. On page 460 we read:

"CASE XXXVII.—During the spring of 1880 I was consulted by a young unmarried girl, whom I had seen grow up from a child and whose character was above reproach. I first made a rectal examination with my finger, with the object of avoiding a vaginal one, if the needed information could be obtained. I detected an extensive cellulitis behind the uterus, and a mass, very tender on pressure, was felt, which seemed too large for the cervix and not large enough for the uterus. I was surprised to find that this mass was the cervix greatly enlarged in proportion to the size of the uterine body, and it had the characteristic feel of a laceration. I introduced a speculum, and, to my sorrow, I saw the mucous membrane of the canal everted apparently to the internal os. If I had been placed on the witness-stand, I could have conscientiously taken an oath that a criminal abortion had been recently produced. As the poor girl got up from the chair, the expression of her face was so indicative of all that was pure and innocent, that I could ask no questions. During the whole course of my professional life I never watched the progress of another case with such intense interest. The cellulitis yielded to treatment with unusual rapidity, and to my gratification the everted surfaces rolled in again as the inflammation lessened; the cellulitis at the end of three months had all cleared up, and but a virgin os remained.

"The progress of the treatment in this case confirmed what I had suspected for some time before, but I had had no means of judg-

ing of the extent to which the pelvic inflammation could cause the uterine tissues to roll out as an effect of the obstructed circulation. The consequence of this experience has been that I now operate on a much smaller number than formerly, and hold that the preparatory treatment in many cases is necessary before the necessity for an operation can be determined upon."

In view of Dr. Emmet's experience in this case and in a number of others of which this one is but an example, it is clear that a positive diagnosis involving, as it would, a serious charge against the character of the patient should not be made until the latter had the benefit of a local treatment which, as Dr. Emmet points out, will by its effect upon a simple ectropion settle the question differentially. By this method also the medico-legal aspect of this disease loses in importance and can be settled "out of court."

If local treatment will cause a simple ectropion to resolve, we cannot agree with Dr. Noble in the advisability of operation. Amputation of the cervix, as of any other organ, is always a regrettable and should be a *necessary* procedure. It is a maiming process, it must interfere in a greater or less degree with the proper self-adjustment of the uterus in the pelvis and undoubtedly greatly affects the probability of future conception.

CORRESPONDENCE.*

The New or Direct Method of Shortening the Round Ligaments for Uterine Displacement.

Chicago, *December 31, 1896.*

To the Editor of the American Gynæcological and Obstetrical Journal:

Sir: On page 680 in the December issue of your Journal Dr. G. M. Edebohls makes this statement: "The name of Newman has under misapprehension been so often associated with the writer's modification of the operation of shortening the round ligaments, originally proposed in 1890, on account of the hasty, ill-considered and baseless claim of Newman, that this would appear to be the proper place to emphasize the fact that Newman's technics come into competition with the prior method of Alquié-Kellogg rather than with those of the writer. In other words, there is nothing essentially original in the operation described by Newman."

An exhaustive search through the literature of Alexander's operation fails to bring to light any associating of the names of Edebohls and Newman except by Dr. Edebohls' own efforts.

Heretofore, because personal controversy is distasteful in the extreme, and because I am confident that the profession is not interested in questions of priority, I have forborne to pursue this old discussion through a press which should be devoted to the advancement of science.

But since silence has only encouraged repeated attacks, and the last one is likely to be given rather wide circulation through its foreign publication and your own issuance, I ask leave to make a final statement of the facts in the case of my connection with the literature and history of Alexander's operation in this country.

And first, as one of the founders of the International Congress of Obstetricians and Gynæcologists, I must take exception to Dr. Edebohls' selection of its second meeting, at which very few of the American members were present, to emphasize an outlawed controversy with one of his own countrymen for the honor of precedence.

In September, 1888, I read my first paper upon "Alexander's Operation, with Report of Cases," and detailed (perhaps not too

* Note.—This communication reached us too late for insertion in the January issue.—Editor.

clearly) a method of operating which was suggested by Dr. J. Frank, and elaborated by experiments on the cadaver.

During the following months this was published in various medical journals, and some reprints were circulated.

At the Berlin Congress in 1890, Dr. Edebohls read a paper describing a mode of procedure so similar to mine that I felt called upon to protest against his failure to acknowledge my connection with it. He promised me personally to rectify the oversight, which he did by the following paragraph inserted into the text upon publication of his paper in this country : " The nearest approach to this procedure which I can find mentioned in literature is that by Dr. Henry P. Newman, of Chicago, for the details of which I must refer to Dr. Newman's paper."

This being still unsatisfactory in my next publication, I made the only allusion which I have ever made to the matter since. I said—speaking of my own method : " Many of its distinguishing features have been appropriated by other operators, notably Dr. G. M. Edebohls of New York, who presented at the Tenth International Congress at Berlin a very creditable *résumé* of the operation. While I congratulate the doctor on the very able manner in which he brought it to the notice of the foreign medical profession, I would remind him that a priority of a year and a half of practical demonstration belongs to Chicago." In reply to this Dr. Edebohls made full amends on page 585 of the *American Journal of Obstetrics*, as follows : " 2. The round ligament is sought for and picked up at its point of emergence from the internal ring.

" *This constitutes the really essential feature of both Dr. Newman's and my own modification of Alexander's operation, and for this I cheerfully and unreservedly concede Dr. Newman's claim that a priority of about a year and a half of practical demonstration belongs to Chicago.*"

Notwithstanding this sweeping admission, in the discussion of Dr. F. W. Johnson's paper before the New York Obstetrical Society in February, 1896, he makes these remarks, which were substantially repeated at the Geneva Congress : " Kellogg was the first to suggest and practice as a routine procedure a small puncture of the anterior wall of the canal, through which he fished for and drew out the round ligament. Newman of Chicago, following a suggestion of Frank, punctured the anterior wall a little higher up than Kellogg, and claimed priority. His procedure, as far as can be learned from his very deficient and imperfect description, differed in no essential or principle from that of Kellogg, ex-

cept that Kellogg punctured the anterior wall over its middle, Newman a trifle higher up—a distinction without a difference."

(I here omit a further reference to Dr. Kellogg, because I have never considered his method and mine as conflicting in the least. A comparison of our writings will convince any one of the essential difference in technique.)

"In August, 1890" (International Medical Congress, Berlin)—I continue to quote the doctor's own words—"Dr. Edebohls reported eighteen cases operated upon by his own method—*that of slitting open the anterior wall of the canal along its entire length as a routine procedure.* Others, among them Alexander himself, had practised this procedure in isolated instances when unable to find the ligament at the external ring. As far as his knowledge went, however, he was the first to propose and practise opening up the entire canal as an essential feature of each operation."

Dr. Edebohls is not likely to have to do battle for the glory of making a large wound where a small one would do, nor is there likely to be any great discussion over the point involved in the stripping back of the loop of peritonæum covering the ligament. That is a mere matter of necessity, which any operator is sure to find the utility of before he has worked very long with the round ligaments.

As for my own claim to have improved the old technique of Alexander's operation, it has not been affected by any counter claim, inasmuch as it concerns mainly *the location of the wound.*

Upon this depend the advantages which I have always urged for the high operation or "direct method":

First, the readiness with which the ligament may be recognized and secured at its point of emergence from the internal ring.

Secondly, the fact that the force used in pulling out the ligament is both brought to bear upon it at its strongest portion and is in a direct line with its intra-abdominal course. This is in strong contrast to the old mode of pulling upon its frayed terminal fibres at nearly a right angle with its inner and stronger portion, and over the sharp resisting surface of the ring.

Thirdly, where the ligament is strong and well developed, as in its upper portion, it can be more securely anchored or made fast to the surrounding tissues.

Fourthly, by seizing the ligament above the inguinal canal, where we have in sight the glove-finger-like reflexion of the peritonæum, we can feel sure that we are drawing upon the abdomi-

nal portion of the ligament and not merely stretching its inguinal section.

Fifthly, hernia is guarded against by the deep sutures constricting the canal about the internal ring, insuring firm union where most needed.

Sixthly, the intercolumnar fibres and tissues about the external ring are not interfered with in any way, and this effectually prevents those distressing sensations of tension and pain which sometimes continue for weeks afterward when the wound is situated lower down, as in the old operation.

Seventhly, having avoided all teasing and bruising of the tissues, with proper attention to aseptic methods, there should always be healing by first intention, drainage is unnecessary and the after-treatment is relatively simplified.

W. P. Newman.

Venetian Building.

The Medical Profession and Medical Publishers.

We have received the following open letter with the request that we "quote or make editorial comment" upon it. We are very glad to do both and here give the letter in its entirety :

Philadelphia, Pa., *December, 1896.*

To the Members of the Medical Profession.

I would be pleased to have an expression from you, either personally or through some medical journal, as to the relations of the lay-publishing firms of medical journals and the profession. The request is suggested by the fact that Messrs. William Wood & Co., of New York, refuse to permit the editors of "The American Year-Book of Medicine and Surgery" to use in our abstracts of Medical Progress articles and illustrations first printed in the *Medical Record* and the *American Journal of Obstetrics.*

This decision seems to me to be wrong for the following reasons :

1. *It prevents the dissemination of medical knowledge.* The Year-Book condenses, systematizes, and criticises the year's medical work in a shorter space and more permanent manner than the journals, and has thousands of readers no single journal can claim,

or hope, to reach. Every physician writes and publishes articles in order that every member of the profession may, if possible, learn of his work, and that science and progress may thus be furthered and humanity benefited. To interfere with such dissemination of our literature in reputable publications is, I think, discourteous and unjust to the profession and an injury to Medical Science.

2. This injustice and injury to Medicine become all the more striking when physicians do not receive a cent of pay for contributions, from the publication of which the lay-publisher is supposed to make considerable financial profit.

3. No other publishers in the world, not even those who pay authors for their contributions, have in the least objected to our reproduction of quotations, abstracts, and illustrations from their journals.

Do you wish to limit the dissemination of your contributions to Medical Science by such an exclusion of them on the part of publishers from reputable publications? *Is this literature the property of yourself and of the profession or not?* Does your gift of it to a journal make it the private property of the publishers of that journal? Is it not rather a loan for temporary use only?

Will you not hereafter demand that there be printed with your article a statement that the right of abstracting the text or reproducing illustrations is guaranteed?

Sincerely yours,

George M. Gould.

119 South Seventeenth Street.

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, Tuesday Evening, December 8, 1896.

CLEMENT CLEVELAND, M.D., in the Chair.

To what Extent can we do Conservative Surgery upon the Uterine Appendages with Safety to the Patient.

BY A. PALMER DUDLEY, M.D.

(See page 110.)

DISCUSSION.

Dr. GEORGE H. MALLETT said that his views were in accord with Dr. Dudley's as to the advisability of preserving some of the ovarian tissue. He spoke of two of his own cases: the first was a large ovarian cyst that was removed, and the question was raised as to whether the other ovary should be removed also. It was a mass of small cysts, but it was punctured freely, the ovary divided entirely in half, the fluid let out, it was touched with carbolic acid and sewed up with catgut. Since then the woman had had a healthy child. In the other case the woman was six weeks pregnant, and the other ovary was in a condition similar to the one he spoke of. He thought one of the great disadvantages of vaginal work was the difficulty of preserving ovaries and tubes. Physicians had acted on the principle that if one ovary was diseased the other was apt to become so. In vaginal work a great many healthy organs had been sacrificed. Every man who followed up these cases where the appendages had been removed had been annoyed by the nervous symptoms. If only a small portion of the ovarian tissue was left, it seemed to control the nervous symptoms and, what was a distinct advantage, preserved the menstrual function.

Dr. W. GILL WYLIE said that the results reported far exceeded what he would have expected from the class of cases. He had repeatedly left tubes that appeared to be injured and enlarged, especially in young women; if they were older he would remove the diseased tubes. He had never resorted to washing out the pyosalpinx. He left a portion of the tube when he considered it in pretty fair condition. He had never removed one ovary and washed out

the tube when it contained pus. In a great many of these cases there was chronic disease of the uterus, and this necessitated complete hysterectomy. The good results reported by Dr. Dudley should encourage us to try and save the organs in many cases. The first and main question in all of these operations should be the question of saving life, not running any risk to life in order to save an organ ; this was the line he followed, and called it conservative work. He certainly would not favor leaving in any diseased portion that might endanger the life of the patient. He thought it was a mistake to say that Batty's operation was followed out or attempted by many physicians previous to 1880 ; an operation was rarely done in those days for diseased tubes. It was necessary in those days to have two or three consultations before an operation, and difficult to get consent to operate ; now a man could do it anywhere without consulting any one. There was too much talk about the number and character of oöphorectomy operations done previously ; these were greatly exaggerated by those who did not operate nor see the cases operated upon. To-day, when every doctor who thinks he is a surgeon operates, many more mistakes are made, especially in diagnosis and faulty work, compared with that of expert gynæcologists.

Dr. R. B. Talbot spoke of several patients he remembered, one of whom had a bad pyosalpinx and a diseased ovary on one side, and a partially diseased ovary on the other. He removed the ovary worse affected, cut off a portion of the other ovary, and stitched it up and left it. The woman recovered, became pregnant, and the speaker attended her in confinement a year or eighteen months afterward. Another case had been seen by two physicians in New York ; she had an enlarged ovary on both sides. One physician said she would never become pregnant, owing to the diseased condition of the ovaries, and the only thing for her to do was to have them removed at once. The speaker advised her to come to the post-graduate hospital for treatment, and she went there for nearly a year.

Eighteen months after she left the hospital the speaker delivered her of a child, and two years afterward Dr. Hanks delivered her of another. He thought surgeons removed too many ovaries. As Dr. Rice had said, the man who removes the most ovaries is the best drawing card. A great many of these patients should be treated and not operated on, for a great many ovaries are removed that are not in a diseased condition.

Dr. H. J Hanks said that he was interested in Dr. Dudley's work in the line of conservative surgery. He always saved as much as honest surgery would warrant, especially in young women. He said that one could not always detect the dynamics of sepsis by the odor of the pus, and spoke of a case of his in the Woman's Hospital where there was no odor whatever and not more than a teaspoonful of pus, and yet the patient died in thirty-six hours from the most overwhelming sepsis. He spoke of three patients who were in his office the past week, each of whom ought to have a second operation performed, only one tube and one ovary having been removed in each case ; all the other ovaries had been apparently fairly healthy. In these three cases he wished most sincerely he had done more than he did.

Dr. J. Duncan Emmet said that there was nothing in the statistics of operations for diseased appendages at the present day to make it clear where so-called conservatism should begin and end. He had seen a number of cases where the ovary and tube of one side only were removed for various reasons. He had seen many cases of unmarried women with salpingitis and follicular degeneration of both ovaries, where the cysts were punctured and one ovary left. In one case particularly the ovary that was left was very much enlarged, but the cysts were emptied and the patient completely recovered her health. In another case the same thing was done, but this patient continued to complain of the same old symptoms, only changed from one side to the other, and she would probably have to have the other ovary and tube taken out.

Tait, when he first brought out his operation on the ovaries and tubes, maintained that it was necessary to do double oöphorectomy always, because the annexa which were left, although healthy then, would become affected. Tait practised what he preached. The speaker, however, thought it was a very hard maxim and often apparently unnecessary ; he had not yet made up his mind whether Tait was right or wrong. He only knew that when the annexa of one side were affected, sometimes the other side would become affected and sometimes not. What Dr. Wylie had said of conservative surgery in regard to the removal of ovaries and tubes was true, but it gave a false impression. He forgot to mention the fact that well into the early history of oöphorectomy asepsis was unknown. Antisepsis had just begun to be used. A man would take a certain amount of carbolic acid, scatter it in water and would feel that he had driven sepsis away. It was the day of

antisepsis and a very weak kind of antisepsis ; but men had been inspired with the idea of immunity and, although they did not have it, were exceedingly reckless. Tait claimed, as he still does, that he used nothing but water from the main in his operations and repelled the idea of asepsis as we now understand it ; he simply used clean things in the conventional sense. Many men were willing to follow Tait's lead in this matter, with the expectation of his statistical immunity ; the slaughter of ovaries and tubes, therefore, for a long time was enormous. It was a terrible condition of affairs ; ovaries and tubes were taken out in a very wild fashion. The generally accepted theory was that if a prolapsed ovary and tube could be felt, they must be diseased and should come out. Now, with our better ideas of pathology, we realized that, if the uterus be prolapsed, the broad ligaments become stretched and the annexa come down with the uterus and become enlarged from their consequent hyperæmia. Frequently, in this way, the condition is purely secondary and functional. By raising the ovary to its proper place in the pelvis, its enlargement would disappear. If the uterus be hyperæmic and prolapsed from laceration and subinvolution, operate upon the cervix and the uterus will recover its normal circulation, rise to its proper place in the pelvis and complete involution take place.

But in those days if an ovary and tube could be felt at all they were thought to be diseased and were removed.

Dr. J. N. West spoke of five cases in which he had removed one ovary and tube and undertaken conservative surgery on the other, within the past eighteen months. In three of the five cases there was no further trouble ; of the other two cases, one had had to be operated upon since and the other had a large mass on the other side. In these two cases in which trouble had returned, there was decided disease of the tube which was enlarged and thickened. In one of the cases he would certainly have removed the ovaries and tubes of both sides, but the woman had come to the hospital to be treated for sterility and it seemed a pity to deprive her of them both.

Dr. Le Roy Broun congratulated Dr. Dudley on the excellent results he had reported, yet could not agree with him as to the wisdom of his course in every particular. In the cases where adhesions surrounded one or both ovaries and tubes and these adhesions could be broken up, he considered Dr. Dudley had given us an instance of his eminent conservative judgment in preserving the

annexa, either in their entirety or in part. The wisdom of his course was eminently brought out by the fact that a number of these patients had since the operation borne children. On the other hand, with regard to the patient on whom he had operated for a gonorrhœal pyosalpinx on the one side and a salpingitis on the other, the speaker did not think it justifiable simply to remove the purulent tube and ovary, since long experience shows that sooner or later a second operation would have to be done for a subsequent active purulent condition in the other. Again, in regard to the case, in which he had opened the pus tubes in both sides, washed them out and returned them to the pelvis, it was the patient's good fortune only that she got well. We well knew that in such cases, when pus is liberated in the general cavity with drainage or with no drainage, the patient would certainly die if the pus is active, but when sterile she would live. We had no means of determining at once the activity of pus ; its odor was no criterion. Again in these cases the fact of returning the tubes to the cavity was fraught with great danger to the patient. It was impossible to render them sterile if the pus they contained was active, and to return such a surface to the general cavity was an experiment the speaker did not believe one was guaranteed in trying. To say the least of it, it was a dangerous effort at conservatism, since its failure would most certainly result in the death of the patient. In such cases, when the adhesions were firm throughout and the pus collections could be reached by the vagina, the speaker believed the conservative method would be puncture and drainage by the vagina. As an example of this method he called to mind two cases, both done by Dr. Cleveland some years ago : one, an estimable woman, whose abdomen was opened with the view of removing purulent tubes. The adhesions being dense, a puncture of the abscess sac was made by vagina and a drainage tube introduced. A year later a similar puncture of an abscess of the other side was made. The patient at the present time was in perfect health and free from pain while locally there was no sign of any of her former trouble, the uterus being small and freely movable. The other, a clinic patient, had on first entering the hospital the following local conditions : the pelvis was filled with exudate and the uterus was imbedded in the mass, with no sign of softening. After some weeks of rest in bed and treatment, the local conditions not improving, she was sent back to the clinic for further treatment. For some months this was given her with some

signs of improvement. She was then returned to the hospital; while there her temperature suddenly rose to 106°. The abscess sac was punctured through the vagina and drained by a double tube. In due time she was discharged from the hospital, with still an extensive exudation in the pelvis, yet feeling perfectly well. The speaker saw her for a time at the clinic without any marked change in her condition. She was lost sight of for fully a year, and judge of his surprise to have her come to him four months pregnant. She was watched throughout her pregnancy, and was delivered safely of a full-term living child. In view of these two cases and others treated in a similar way, he thought that where the abscess, whether of the tube or ovary, was firmly surrounded by adhesions and could be reached by the vagina, it was by far the preferable conservative method of treating such cases. Surrounded as they are by adhesions and cut off from the general cavity, the condition approaches as nearly as possible to treatment of an abscess in any other locality—that is, opening and drainage. If there should be a failure to cure the case, as there might be a recurrence, one had certainly done no harm and would be free to adopt some more radical treatment. The instrument used for this purpose was fully described by Dr. Cleveland in the *Transactions of the New York Obstetrical Society* of November 21, 1893.

Dr. W. L. Dunning said that in operating his idea was to save everything that could possibly be saved within the range of safety; save one ovary and tube, if possible. He spoke of one interesting class of cases, ovaries that were prolapsed and very much enlarged from chronic congestion. He thought something more was necessary than to merely puncture the cysts. He had followed, in a few cases, a free incision of the cyst, cauterizing the cavities and then closing them with fine silk. He spoke of a case he had operated upon, a young woman who was very desirous of having a child, she having already had one that was still-born, in whom the ovary was much enlarged, cystic and prolapsed. After incising and freely cauterizing the cavity, he closed it with very fine silk suture, but unfortunately that case did not do very well; so far as the function of that ovary was concerned it continued to give her much trouble. Before the operation she had suffered almost continuously on that side and suffered intensely during her menstrual periods for a week with very severe pain, so that she required the services of the speaker during that time. She had, at the same time, a cyst on the left side about the size of a man's fist. The

speaker removed it, leaving a small particle of the ovary behind, and endeavored to save the right one ; but he was grievously disappointed in that she was not relieved. He believed in conservative treatment and intended to practise it whenever he could, but this case did not turn out very well. She suffered quite intensely at every menstrual period ; the organ was now three or four times its normal size and exceedingly sensitive to touch, suggesting the possibility of pyosalpinx. He would like some idea from others as to whether the bad result could be due to cauterizing the cavities and closing them over or whether it was due to the fact that the organ was not raised to its proper level and fastened.

Dr. A. P. Dudley, in closing, said that he agreed with the speakers who limited the age for this work ; a patient of forty was the latest among the lot, and he used the treatment in that case simply because the husband was not present, and he promised to do the work later if the woman had pain. The result proved that in his ignorance he did the best thing. In regard to the danger of return, in this work he was careful to assure himself that the body of the uterus, the lining membrane of it, the tubes and especially their ovarian extremity were as healthy as possible or put into a condition to become healthy, and he never operated upon one of these cases that he did not dilate the uterus and thoroughly curette and then, after washing the uterus thoroughly with hot water, used bichloride solution of mercury 1 to 3000 or 1 to 4000, dried the part with sterilized cotton and then touched it carefully with pure carbolic acid, dried it again and packed with dry five per cent. iodoform gauze. In almost all of these cases it had been the expressed desire of the women to save the ovaries if possible. They desired to retain their normal functions if they possibly could, which was a reasonable excuse for a man to work to that end. He always curetted a cyst of any size with a sharp curette. He never used catgut but preferred the finest silk and a fine cambric needle.

Fibromata Complicated by Endometritis.

Dr. W. Gill Wylie related a case that he saw several years ago in consultation. The patient had been delivered by two or three men the day before ; this was forty-eight hours after the delivery. The abdomen had swollen up and the symptoms had become very severe. They were not able to draw the urine. She had been delivered with forceps ; the speaker examined her and, when he put his finger into the vagina, he could lift his finger

directly up into the peritoneal cavity. The symphysis had been torn completely in two, a jagged piece having been left ; the bladder had not been torn but had been pushed to one side and he drew off a quart of bloody urine. She had general peritonitis. She died the next day. He simply related this, showing how the forceps had torn the woman open. He had lately seen a similar case : a perfectly healthy young Jewish woman, twenty-four years old, who had been delivered in the country with forceps thirteen months ago ; she thought she had a prolapse of the bladder and the speaker found there was a hernia in the left labium, containing intestines, omentum, etc. She was quite stout and, when the speaker hunted for the pubic bone, he found a complete separation, could put two fingers between the ends of the bones. Although she walked about she wobbled a little in her walk, and he was interested to know what could be done for her. He was satisfied that when she was walking the bones tended to separate. He thought by compressing the pelvis he could approach the bones somewhat. The bones were not only separated but one was displaced upward. He intended to bring the bones down and hold them in approximation, then cut down and wire them and readjust the soft tissues. He asked if such cases as the two reported were common. It was evident that the men in using the forceps used them as a lever against the pubic bone and so tore it apart.

Discussion.

Dr. Hanks said he was reminded of a case similar to that just reported : the wife of a distinguished oculist of this city, where the bones were separated during a difficult instrumental delivery and a complete cure was made by applying adhesive plaster and compresses and avoiding locomotion for four weeks.

Dr. Wylie said that in the case he reported the bone was torn and the epiphysis broken off. The patient was a healthy woman, and some operation would be necessary to press them together and to wire the bones, but the extraordinary fact of tearing the bones and crushing them so that they could not unite he had seen but once before.

Dr. Dudley said that if Dr. Wylie would make the incision down to the bone and wire it, there would be no reason why he could not unite them ; but he must remove the cartilages if he expected to get a bony union.

Official Transactions. G. H. Mallett, *Secretary.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, December 3, 1896.

E. E. Montgomery, M.D., in the Chair.

Ectropion of the Cervix in Nulliparæ Resembling Laceration of the Cervix.

By Charles P. Noble, M.D.

(See page 135.)

Discussion.

Dr. C. P. Noble: I should like to ask Dr. Montgomery if he has met with similar cases.

Dr. E. E. Montgomery: I have not seen such cases in the unmarried. I have seen nullipaious women who denied having been pregnant in whom there was a wide open os, erosion of the mucous membrane of the cervix, with evidence of remains of glandular tissue over the whole lower end of the cervix. If these patients had given a history of pregnancy I would have supposed laceration had occurred. I have no reason to doubt the history given, and do not believe they had been pregnant. The condition was either a congenital one or the result of inflammatory trouble.

When shall we Use the Forceps?

By William E. Parke, M.D.

(See page 164.)

Discussion.

Dr. G. M. Boyd: Dr. Parke's paper, I think, is one of a great deal of interest, and as I feel I agree with him in almost all that he says, I have but few remarks to make. It is of interest because it brings before us for discussion an operation which we may all be called upon at times to perform, even those not devoting much of their time to obstetric work. It is an operation the gravity of which depends upon our knowledge of the case in question. From the title of the paper I did not know whether the essayist referred

to the time during labor which the forceps should be applied or did he mean to discuss the conditions upon the part of the mother or upon the part of the fœtal ovoid demanding operation. From his remarks I infer that it is the time when the operation should be performed that is only under discussion. Every obstetrical case is a problem the solution of which depends upon very careful study of the case. To determine then the time during labor that the forceps are needed, we must study our patient's condition and the condition of the unborn child, and I would lay stress here upon the importance of studying every case during gestation, as to the physical condition present, and to study not later than the two hundred and fiftieth day the shape and size of the pelvis and the position and size of the fœtal ovoid. The knowledge gained by carefully practising pelvimetry is considerable and obstetrical palpitation will often enable us to anticipate some of the graver obstetric operations. It seems to me that in selecting the time to perform the forceps operation we must study each case individually, and the time will depend very greatly in each case upon the study of that case ; we cannot fix upon any definite time. We find, I think, that errors are made in the forceps operation, the operation is performed too early, or the operation performed too late through the neglect of careful study of the case, and it is a little surprising sometimes the lack of attention that is given to the study of the fœtal heart. It is simply impossible to determine when to perform the forceps operation without a careful study of the fœtal heart, and at times we find that the operator is not always positive that the cephalic end of the ovoid presents. The forceps operation is one we are called upon to perform often in an emergency, not having sufficient time to prepare for the operation. The physician has been long in attendance upon his case, and finally decides that there is some operative interference necessary. He becomes disturbed and fails to exercise that calm judgment that he would in conducting other cases, and performs the operation possibly too early or possibly delays the operation, or, again, performs the forceps operation in a pelvis which contraindicates it, the measurement of the true conjugate being very much contracted. The forceps operation is very greatly performed, in my own opinion, in the interests of the child, and in regard to the time for performing the operation, it seems to me it must all be based upon what I have said of the careful study of each case. The conditions demanding it are of course innumerable ; however, that portion of

the subject I do not feel is included in the discussion. The author mentions inertia as being a frequent indication for the forceps. In my experience it has not been a very frequent indication for the forceps operation. I have felt that there has been some difficulty in the mathematical problem ; there is some obstruction, some disproportion between the birth canal and the child, and some of the cases that some might have considered as cases of inertia have seemed to me to be cases of dystocia.

Dr. CHARLES P. NOBLE : Like Dr. Boyd, I must say that the character of the paper almost precludes a discussion, because the propositions laid down are so sound that one must agree, and that cuts off discussion very much.

As to the use of forceps during the first stage, in line with what Dr. Boyd has said, I feel it is very important if the cervix does not dilate and the head does not come down, that the cases should be carefully studied to find out the reason why. I am quite in accord with Dr. Boyd that in many of these cases, whether delay is in the first or second stage, it is more a question of disproportion than of lack of expulsive force upon the part of the uterus. I think there is no more important rule in obstetrics than if labor is delayed, that the case should be carefully studied, to see whether there is some disproportion between the size of the child and the size of the pelvis.

We were taught, in Philadelphia, under the lead of Albert H. Smith, who was a strong man in his day, that the cause of delay in perhaps a large proportion of cases of labor was that the head was not well flexed. I think that is a very pernicious teaching. The reason why the head is not well flexed in many cases of labor is because it is very much more advantageous to come down somewhat flexed. In case of slight flattening of the pelvis, the natural mechanism is for the head to come down with the occiput to one ilium, and the sinciput to the other, and to come down in a condition of semiflexion instead of flexion. I think that old teaching should be revised if still in vogue. If the head does not come down flexed the obstetrician should study the case and see if he has to deal with a flat pelvis.

I think if there is an arrest during the first stage, the obstetrician should study whether it is due to lack of propulsive power or bony malformation upon the part of the mother or simply disproportion between the size of the child and the pelvis. After rupture of the membranes in the first stage of course the usual rules

do not apply. The conditions are very similar in the first stage after the membranes rupture to those of the second stage, and particularly is this true of the child. You can hear very clearly the sounds of the fœtal heart with the phonendoscope, and I am sure this instrument will have a large field of usefulness in studying fœtal heart beats in labor.

As to the second stage of labor, I agree entirely with what Dr. Parke has said. He covered a point which I will mention by stating that the operator should be competent—that is, he should know what sort of forceps to select, how to apply them, and how to use them. In case of simple inertia, with a gentle use of the forceps with minimum traction, simply enough to add sufficient power to supplement that of the mother's forces, undoubtedly only good can be done. Tarnier's forceps are best when the head is at the brim or in the cavity. When the head is well down the ordinary forceps should be employed, such as Davis or Hodge. The whole point comes in, as put very concisely by Dr. Parke, that the operator must be competent. I agree in using forceps under the circumstances laid down by Dr. Parke even in simple inertia. There is no condition in obstetrics which requires greater judgment than cases in which there is a "tight fit." It is well known that women with considerable deformity of the pelvis, after long labors frequently have given birth to children, even alive, when by version or forceps dead children have been delivered. This good result takes place through the process of moulding. When the obstetrician allows moulding to take place he should watch the condition of the soft parts very closely, and if there is œdema of soft parts below the fœtal head interference should not be delayed lest sloughing and fistula result. I think that, except in the hands of a very unskilled operator, the one thing to be urged against forceps is that if they are not used judiciously at the *end* of the second stage serious laceration of the pelvic floor may be produced. Of course the assumption that the operator is competent covers this point also.

It is worth alluding to that deliberation is very necessary and very important at the conclusion of the second stage of labor when the head is down on the perinæum and the perinæum is bulging. Fifteen or twenty minutes spent in allowing the head to recede and pulling it down again, will permit the delivery of many a head without rupture of the pelvic floor when a little greater precipitancy would cause extensive laceration. Where the head is forcibly

dragged through, every man who has to do much gynæcology knows that the muscular structures of the pelvic floor can be widely torn. This of course is due not to the skilful use of forceps, but in being in too big a hurry to pull the head through at the last minute—except in cases of disproportion between the size of the head and the maternal soft parts.

Dr. Richard C. Norris: I did not hear Dr. Parke read his paper, but he has kindly allowed me to look over his conclusions, with all of which I agree. So far as the use of forceps in the first stage of labor is concerned I agree with the writer that it is foolhardy to attempt to use the instrument unless in the presence of great danger to the mother. Under such circumstances, however, I would not hesitate to use forceps in the latter part of the first stage to aid dilatation, but always to use the instrument with great caution, taking care not to pull the lower segment of the uterus into the vulva. If the case is still more urgent I would not hesitate to do as I have done in several cases—incise the cervix, deliver and sew up the incisions.

As to the frequency and utility of forceps delivery in the second stage, in uterine inertia the most common indication, I believe the frequency with which the instrument is used will depend upon individual skill and experience in forceps deliveries. In my first 500 cases at the Preston Retreat I used the forceps in 10 per cent. of the cases, and in much more than half that number the indication was uterine inertia, the instrument being employed both for the child's and the mother's sake. If my recollection serves me correctly, of the large number of instrumental labors with uterine inertia as the indication I lost but one child, this one dying of inspiration pneumonia. A few of my medical friends criticised the frequent use of forceps as reported in that series, and I made up my mind at the beginning of this year to leave the cases more to themselves, and, being a little more actively engaged in outside work, I felt disposed more frequently to let Nature take her course. During the past year I have used forceps at the Retreat but seven times in 220 labors, and I have lost 28 babies, or 13 per cent., whereas in the 500 cases to which I first referred the mortality was 7 per cent. When it is remembered that 5 per cent. of ordinary vertex presentations die as a natural consequence of birth, and when I contrast 500 cases in which I used the forceps so frequently with a total infantile mortality of 7 per cent., with 220 cases and 13 per cent. of infantile deaths, a large proportion

of which were due to failure to use the forceps, the advantage to the child of timely interference is apparent. The dead babies at the Retreat are always posted by a competent pathologist, either Dr. Stengel, Dr. Westcott, or Dr. Burr. Examinations of these babies repeatedly have shown no lesion to account for death ; they have rapid respiration, rapid heart action, and all the clinical signs of an inspiration pneumonia, and many of them I have treated for inspiration pneumonia, but at the autopsy no lesion was found except varying degrees of congestion of the brain and its membranes. My personal belief is that delay in delivery will often produce such compression of the brain as to seriously affect the respiratory centre and to cause the death of the infant in two or three days. For my own part, being satisfied that the mother's mortality is not increased, that her comfort is enhanced, and that many children are saved that would otherwise perish, I subscribe to the view that, when in the second stage of labor the head has not advanced materially in two hours, there should be no further delay in applying forceps, provided the operator is well trained in antisepsis and in forceps deliveries.

In regard to the use of forceps when there is a moderate amount of disproportion between the size of the head and that of the pelvis, I believe that whenever such disproportion is present, the axis-traction instrument should be employed not only for the comfort of the operator but for the mother's sake. Delivery with an axis-traction instrument is less tiresome, will prevent dragging of the bladder from its attachments, and will facilitate easy and safe delivery.

I do not know whether the author of the paper had anything to say in regard to the use of forceps in contracted pelvis or in the face of grave emergencies threatening the mother or the child, and I shall therefore not discuss those subjects.

Dr. R. A. Cleemann : I have not systematized my records, although I have the notes of nearly two thousand cases of obstetrics in private practice ; without going over them carefully, I think I use the forceps about once in six times, and in the cases described by the doctor who has read the paper, I am entirely in accord with him that the forceps should be used soon. My own practice is to wait about two hours, and if the labor is not advancing then and there is no great contraction of the pelvis, which is in my experience very rare, I always use forceps ; one consequence is, I believe, that I have never had much trouble from post-partum

hæmorrhage. I can only remember in my experience about three or four cases of severe post-partum hæmorrhage, and none of them terminated fatally. As far as septicæmia is concerned, I have never lost a patient from that cause in cases of the kind mentioned. I think by delivering the child early the woman preserves her powers of resistance ; she is much more liable to septicæmia and puerperal fever when not delivered promptly.

As to the danger of forceps, it seems to me to be enormously exaggerated in these cases. I can remember but one case in which I did serious injury to the woman with the instrument, now several years ago. The head came with a jerk, as it were, all at once, and the perinæum was badly torn, even to the anus. It was remedied, however, and the case got along very well. In the multipara it is very seldom that the perinæum is torn with the forceps if one is at all careful : I believe, on the contrary, in primiparæ you will nearly always tear the perinæum to some slight degree. With primiparæ of course I am disposed to wait longer, and in multiparæ, where the case is only one of inertia, I do not wait as long as two hours ; I sometimes deliver in one hour or less. I do not, however, think under ordinary conditions two hours is too long for women to pass in the second stage of labor. From the use of forceps I have never seen any bad results in my own practice. Of course I have had a few children born dead, but I think most of them would have probably been born dead without the forceps. In regard to contraction of pelvis, I think one can tell pretty well without accurate measurement whether there is a dangerous contraction or not ; and when you come to determine between turning and the forceps I think with much contraction that turning is best. I have seen in the hands of others some very serious results from using forceps when the head is high up, especially from using the instrument too soon. If we wait until the os is perfectly dilated and there is an ordinary degree of width in the pelvis I think there is almost no degree of danger from the use of the forceps in the hands of one who is competent at all.

Dr. Longaker : Incidentally there was brought out the point in this discussion that in the first stage of labor the forceps might become necessary. I am very glad of this because recently I have seen most serious consequences result from the delay in the first stage of labor in which the membranes ruptured early, the dilating stage lasting something like forty-eight hours. I was called to do some quite extensive surgery necessitated by the forceps ap-

plication. The child had been delivered on my arrival, the woman was so badly infected evidently during labor that the odor emanating from the uterus and wounds made there was putrid. Not only was the perinæum torn and rectum one inch above anus, but anterior vagina and deep pelvic floor was laid open. Remarkable to say, the patient made a recovery after something like five or six weeks' confinement to bed.

I would hardly endorse the point made by the reader of the paper that if the head remains stationary, and I presume he means when the head is resting on the pelvic floor, after waiting half an hour it is certainly time to apply forceps. I think there is frequently a more or less complete separation of the placenta and death of the child in these cases. I am convinced if this time is exceeded the proportion of dead babies will be quite large, as has been already stated by one of the speakers.

There is one indication for the forceps that I regret the reader of the paper did not discuss more extensively, that is the indication which is afforded by contraction of the pelvis as a specific indication for the forceps. Such a degree of contraction as would arrest the head at the superior strait and offer a considerable obstruction to labor. My own opinion in regard to these cases is that in many, certainly if there is a decided obstruction, the results from the use of the forceps will be very bad, and I believe that they will always be bad unless the Tarnier or some forceps acting on this principle are employed. The results are bad so far as the child is concerned ; the pressure and injury to the child's head frequently kills it outright or produces serious after-effects. There are frequently more or less extensive injuries to the vagina and the cervix. My conviction is in the case of obstruction which is appreciable, decidedly arresting the head above the superior strait, any method rather than the forceps is proper under such conditions. I think my more recent experience proves that version may successfully overcome obstructions with less detriment to the child, with greater safety to the mother than can be overcome by the forceps.

Dr. E. E. Montgomery : I should like to ask Dr. Longaker how he repaired the injuries he has spoken of.

Dr. Longaker : The anterior vaginal wall was sutured with continued catgut suture as well as could be, and the rectum and also the perinæum with partial success ; the sphincter failed to unite. I was surprised to find as much union as did occur.

Dr. Renel Stewart : There is one form, or one condition, in which I make it a rule always to put on forceps which has been to a certain degree anticipated. This is where we have the kidney-shaped pelvis and the vertex is on the smaller side. In that case the head will not come through the superior strait. If added to that, the body of the child corresponds exactly to the position of the head and you pass your hand up and turn so that the vertex is on the larger side, it will very soon go back again. In that case I always apply the forceps to hold it there till engaged in superior strait, and if it does not come down I apply forceps till the superior strait is passed. I have found that impediment very frequently.

There was one statement made in regard to the danger of flooding in case forceps are not used at the proper time, and this recalls to me one of the saddest experiences in my whole life.

Perhaps thirty-five or forty years ago a gentleman came to me and wanted to know whether I would attend his wife, and said to me, " Will you promise me you will not use forceps ?" I said, " No ; I would not promise that." He went away and came back about one or two weeks later, and said, " Will you promise me not to apply forceps until my wife acquiesces in it ?" I said, " No." He then asked, " Will you not do it until I assent to it ?" I said to him, " Look here ; do you want to run the risk of your wife's death ? Are you willing to take the responsibility of such an issue ?" He replied, " Yes." I said, " Then I promise."

The labor came on, the pains were very severe for a long while, and I noticed my patient was enormously large, but I was not as particular in regard to listening to sounds of heart then as we all do now, or ought to, and I did not put my ear down and discover that there were two children there. The pains became less and less, and I felt anxious. Oh ! if I had not made that promise, and yet I felt bound to keep it. All at once a gush of blood came out. I quickly took my forceps, grasped the child's head, pressed upon the uterus, and thought I had checked the flow. I withdrew the child as rapidly as possible. There came a second gush of blood. I passed my hand up and grasped another child and brought it down, put forceps on head and withdrew it. That woman never properly reacted, and I made up my mind that never on earth would I make such a promise again. If I had put on the forceps at the time I ought to have done, that woman's uterus would not have lost its power ; there was true inertia, and nothing I could do would change it. We should assume the re-

sponsibility of using the forceps whenever our experience has taught its propriety, and never ask any one, patient or any one else. In fact, I apply them without letting the patient know it, and I do not wait for any specified time.

Dr. BURNS: I would like to say something upon this subject, but the paper as it has been written confines itself strictly to the time at which the forceps should be applied. That application, as far as my own experience is concerned, would resolve itself into this: that if the first stage of labor is completed and the patient passes into an active second stage of labor and does not complete parturition in from two to three hours I should apply forceps. The matter of inertia calls for it more frequently. I find that a large number of primiparæ with which I have had connection do pass into a state of inertia at the second stage of labor, and require forceps. I had a case this morning, and it is strange how individual experiences differ. One practitioner here this evening has stated that in a number of cases he has seldom had to deliver primiparæ with forceps. I think I deliver fifty per cent. of my primiparæ with forceps. It does not coincide with the experience of physicians here who have had a large practice; in these cases it is usually due to uterine muscular exhaustion when inertia comes on; the uterus is simply a muscular body which is subject to the same physiological laws as are the muscles of any other part of our body—excessive use brings fatigue. Application of forceps terminates suffering for child and mother. There has been incidental allusion to other complications requiring the use of forceps; there are a great many instances of that kind. There has also been allusion to lacerated perinæum. I have lacerated the perinæum and expect to do it again. If you take cases of primiparæ with posterior occiput presentation, with rigid parts and undertake to deliver that woman when the head has reached the superior strait it is almost impossible to deliver without laceration of perinæum. It is too late to change the position of the child; you must rotate the head and pull the head directly over the pubes, and oftentimes it is utterly impossible to prevent it from coming all at once. When it comes on the floor of the pelvis the perinæum is gone in an instant. In the case of impaction of head at superior strait, where there is a rigid os but partly dilated, with nervous irritability, you have reflex action there, and you have the danger of puerperal convulsions. I have seen patients of this kind.

In reference to Dr. Stewart's experience in regard to promising a person not to use forceps, it is an exceedingly detrimental practice to do so. I have experience of that kind where the mother persuaded me not to use them, the patient went into a convulsion because I allowed labor to continue too long; as soon as convulsion occurred I bled her and delivered by forceps.

In regard to the use of forceps, I think they are wise, and I do not think gynæcologists can criticise obstetricians for lacerations of perinæum, because these things will occur, and the only surprising thing to me is that there is so much difference of experience in the same line of work. I treat posterior presentation in the primipara with forceps; it is hard work for both mother and infant.

Dr. William S. Stewart: In regard to the use of forceps and their effects upon the perinæum: if we are careful to take with us two kinds of forceps, that of the Davidson, with the long blade not quite so much curved as that of the Hodge or the Wallace, we will be prepared to use the forceps, whether in the superior or the inferior strait. A presentation in the superior strait requires narrow forceps, long blades without such an abrupt curve as the Wallace or Hodge. Either of the latter instruments will slip off and do damage both to child and patient. If, on the other hand, the head has come down to the inferior strait and you apply either a Hodge or Wallace forceps (the Wallace I prefer, because it is an exact imitation of the ordinary carus curve), then the curve of the forceps is such that in the delivery of the child it does not impinge upon the perinæum at all. It is the child's face which impinges upon the perinæum, and all you have there is the extra thickness which is produced on the sides of the child's head by the blades of the forceps, and I have yet to have my first experience in lacerating the perinæum by the delivery of the child's head with the forceps, because I am careful that the points of the blades do not project beyond the child's head. My experience has been that the lacerations are produced by careless delivery of the shoulders rather than by the delivery of the head. I have been in the habit, when I take off my forceps, of examining whether I have torn the perinæum. In the primipara of course the fourchette is always torn; beyond that I have not known of as much injury done by the use of the forceps upon the head as in delivery of the shoulders. My method is not to compel patients to submit to the use of the forceps; I cannot see why we should

not use our reasoning powers in persuading our patients to submit to the use of them. I speak to them kindly about it and say that the forceps is only longer fingers than I have; that I have an aseptic instrument and an instrument that will be of some service, and that I will use it at the time of a pain, and also add, "Now, if you are not willing to have this instrument used I will not use it." I appear indifferent about it to a degree, saying, "It is only to help you, not for my benefit," instead of saying that I must get to my office, and "I can deliver you at once and save you all the suffering." In consequence of such evident haste to get to his office a certain doctor of this city was pronounced a butcher and murderer because he applied the forceps prematurely, and the result was that the patient flooded to death. The patient wanted him to go to his office and return to her; but in a previous labor she had played the slip on him during his absence. When he came back he found the child delivered. So he preferred to prevent this chagrin the second time. We should be kindly disposed, and advise with our patients, yielding to them somewhat, but at the same time explaining the benefit they will receive by having the forceps used. I endorse what has been said by the other speakers in regard to the use of the forceps. I remember delivering three women (in succession on one day), two of them with forceps and the third without. I waited in the last case because the patient was timid and did not want them used. She made the slowest and poorest recovery.

Dr. G. Betton Massey: There has been a good deal said about the disadvantage to the mother in using forceps, but little about the disadvantage to the child. No one has told us how many children go to idiot asylums from this cause. Some mention has been made of some of them dying; but it will take considerable study and research to find out whether our increasing cases of insanity and increasing cases of epilepsy are not primarily due to injuries of that kind. And though Dr. Stewart has given an instance of a very selfish man who forced a woman to submit to forceps to suit his own convenience, I do not doubt that they are almost invariably used at the solicitation of the patient. I know that was my experience in the brief years that I did that kind of work. The poor sufferers were anxious to get through the serious work they had on hand. But there is certainly some other way of arousing the muscle than by taking its work away from it. We have here a muscular organ which by inertia pro-

duces a large number of the instances where forceps are required, and it seems unscientific to assume that the proper remedy is to mechanically take away the burden that it has before it. There are other ways of stimulating muscular action, and I am glad of this opportunity of calling the profession's attention to the value of the faradic current in cases of inertia of the uterus both before and after delivery of the child. This was a question which was very largely studied and urged by Dr. Baird, of Texas, some years ago, who showed conclusively that many cases of inertia of the uterus, where os was dilated and there seemed to be cessation through fatigue of muscular centres, that a faradic current, easily obtained by a portable battery such as a man might carry in his overcoat pocket, would produce contraction of this tired muscle applied over upper part of uterus where the lower extremities of the child are drawn up. I had some years ago an instance verifying this fact, where surely the forceps otherwise would have been required. I sent for the battery, and after the necessary delay of getting it and putting it in operation, I turned on the current and there was a feeble pain, followed by stronger ones, which quickly brought about delivery of the child. As I said, a faradic battery ought to find a place in every obstetric bag, for many women can be saved hours of suffering previous to the birth of the child and be freed from the dangers of post-partum hæmorrhage after birth. I declare it is impossible for the flaccid uterus to remain flaccid with a current inside of it. In the towns and cities of this country where the Westinghouse or alternating current is used, all that we have to do is to unscrew the lamp, attach a controller to the fixture, and apply electrodes to the outside of uterus, which can be easily improvised from napkins wet in salt water. Even this external application will cause contraction in post-partum hæmorrhage instantly, without further loss of blood. The contraction can be kept up as long as necessary. But a faradic current is best applied by means of a thoroughly aseptic intra-uterine electrode. The primary current should be turned on coincident with each pain, if there are pains.

Dr. Richard C. Norris: There were one or two thoughts that occurred to me as the discussion has progressed: first, with reference to what Dr. Massey has said. In the first place, his statement as to the number of imbeciles following the use of forceps. It is the general belief of neurologists that more nervous affections of childhood and more brain lesions are the direct result of the

failure to use the forceps than from the use of forceps. If you remember, Dr. J. Madison Taylor within a few years published a very interesting paper which was a symposium of opinions of leading obstetricians, and which contained facts gathered from a search through the statistics of a number of children's hospitals to determine this very question. His conclusions, based upon his research, show that the failure to use forceps was the cause very frequently of intra cranial lesions from pressure, and I am thoroughly convinced that the forceps will prevent the occurrence of the very accidents to which Dr. Massey refers.

Again, as to the use of a battery as a portion of the armamentarium of an obstetrician : Dr. Massey loses sight of the fact that the forceps is used in the case of uterine inertia not because the uterus will not act and will not overcome the obstruction. It is well known that when an obstruction to labor exists, that in itself stimulates the uterus to efforts. In a flat pelvis the uterus contracts harder and becomes, as it were, petulant in its effort to overcome the bony obstruction. As a matter of fact we use the forceps because the uterus is played out. Dr. Massey would not whip an overdriven horse, and the use of electricity under the circumstances he describes would be analogous. It is the *vis a tergo* that is lacking, and your forceps supplies the force to extract the child and save the uterus from further and harmful effort.

I would differ as to the wisdom of carrying in one's obstetric outfit an electrode, ready at a minute's notice to introduce into the uterine cavity during labor alongside the child or even after labor. Such a measure would be a most reprehensible and dangerous practice. In the present antiseptic era, when we put our hands into the uterus as infrequently as possible, when we sterilize forceps by boiling, the use of an electrode, difficult to sterilize if properly insulated, would simply jeopardize the patient's life.

The use of forceps *versus* version is a subject which has been very freely discussed in this room time and time again, and there are grave differences of opinion ; and while each man is giving his own experience I would like to add mine to what has been said as to the advantage of version over the use of forceps. It is well known that by turning the child when there is a certain degree of pelvic contraction you can more speedily accomplish delivery, but I believe with greater injury to the child's cranium and the mother's soft parts than by a slow delivery with the forceps. The choice of version or of forceps when we have a flat pelvis cannot

side the uterus. This he did without an anæsthetic, burning it off. After this he inserted a pessary because he said the uterus was out of place. It came out a few days after it was inserted, and becoming disgusted, she did not return to him.

I was asked by Dr. O. S. Phelps to see the case on October 21. I found upon examination a good-sized cyst to the right of the uterus and another tumor somewhat firmer but apparently cystic on the left, and the uterus displaced forward, by these growths, against the bladder. I advised their immediate removal by vaginal section, which was consented to. The operation was done October 27, their removal being accomplished through an incision in the vaginal vault posterior of the cervix. On bringing down the mass on the left, which was the smaller growth, a quantity of thick yellow fluid, resembling pus, escaped, and soon I discovered the tumor was a dermoid filled with hair, which by examination of the specimen seems to spring from an elevation resembling a nipple on the inside of the cyst wall. The hair appears to be of great length. As yet it has not been successfully unravelled.

The pedicle was ligated with heavy silk and returned into the peritoneal cavity. The other, which proved to be a true cyst, was brought down and emptied, the pedicle ligated with silk and the stump returned into the peritoneal cavity.

The vaginal incision was not closed, but iodoform gauze was inserted against the stump to prevent adhesion and for drainage, the vagina being subsequently filled with gauze. A part of this gauze was removed at the end of twenty-four hours and the whole at the end of twenty-eight hours.

On the sixth day after the operation the vaginal wound was found to be entirely healed, and on the twelfth day she was permitted to get up. She has made an uninterrupted recovery without a single unfavorable symptom, and left the sanitarium at the end of three weeks after the operation.

There was no shock following the operation, and the temperature at no time went above 99°.

A Large Parovarian Cyst Attached to the Uterus and Intestines by Firmly Organized Adhesions ; Removal by Abdominal Section ; Recovery.

Dr. Augustin H. Goelet : This case, which was referred to me by Dr. Grace Pulver, of Torrington, Conn., presents certain features which make it of unusual interest.

Mrs. M., aged twenty-three years, was married at seventeen, and had three children, the last being eight months old when she came under my care in September. After the birth of her second child she thinks she had some ovarian or uterine trouble. After the birth of her last child she had a sharp attack of peritonitis which continued for six weeks. Since that time she had suffered pain in the back, pelvis, and both inguinal regions, and severe pain in the left leg upon the slightest exertion. During last spring and summer she had several attacks of peritonitis, and her physician thought there was evidence of pus formation.

When she came under my observation in September last I found the abdomen enormously distended, and there was a pelvic tumor the exact nature of which could not be determined until this distension was overcome. Then a cystic tumor was made out on the left of the uterus, which extended around behind it. To the right of the uterus there was apparently another cystic mass which was attached to the other, but there was a sulcus between the two above and behind the uterus. This gave the semblance of two distinct tumors. This was caused by a firm band of adhesion, as was discovered on opening the abdomen.

After careful preparation for two weeks to overcome the intestinal distension, during which time the patient improved greatly and was completely relieved of all pain, cœliotomy was performed September 23.

The operation involved great difficulty and consumed considerably over an hour, owing to the densely organized adhesions binding the tumor to the uterus and to the intestines everywhere. The tumor, which proved to be a parovarian cyst springing from the left broad ligament, was literally buried in a mass of adherent intestines. Being restricted by the adhesions above, the tumor had projected behind the uterus, which it crowded forward on the bladder and projected over to the right side of the pelvis. The right ovary, being cystic, was removed also.

The highest temperature during convalescence was on the evening of the second day, when it reached 100°. On the third day jaundice was discovered. This yielded readily to calomel. Otherwise convalescence was uneventful. The patient left the sanitarium at the end of three weeks perfectly recovered. Her physician has reported recently that she is in excellent condition.

Discussion.

Dr. J. Duncan Emmet said there was one statement made in the history of the cases which struck him forcibly and on which remarks might be pertinent and that was that one of the patients got up in two weeks after the operation. Of course the matter of rising after vaginal section is not so important as it would be after hysterectomy, for evident reasons but the remarks are equally applicable to both operations. It is a great mistake to allow a patient to get up so soon after an abdominal or vaginal section. He did not think that any scar in the vagina or any healing process taking place in the vagina is sufficiently strong or has sufficiently passed its green stage to stand the weight of the intestines and pelvic organs as early as two weeks. The tendency of recent years is to allow the patient to get up very much sooner than was formerly the case. Even in the case of simple vaginal section and removal of the ovaries or the appendages these remarks hold good to a certain extent.

Dr. Goelet said it was difficult to keep the patients in bed. They might not be strong enough in some cases, but in this it certainly resulted in no harm.

Dr. E. B. Cragin said that he usually allowed his patients up at the end of two weeks after a vaginal section, and never found any harm resulting from it.

Dr. H. J. Boldt said he had not heard the beginning of the discussion, but could only corroborate what Dr. Cragin just stated. He has had a number of vaginal sections and hysterectomies, and it is unusual to keep the patient in bed for two weeks. She is usually up at the end of a week or ten days, and so far he has found no case which has been in any way injured thereby or which has shown any weakness of the pelvis.

The President inquired as to his practice in cases of abdominal section.

Dr. Boldt said that in abdominal section he did not allow them up as soon as that. He does not allow them up in less than three weeks, although he is aware that it is the practice, especially with the Europeans, to let them up in two weeks. The same thing may hold good there, but he is afraid to let them up so early, for the reasons given by Dr. Duncan Emmet.

Dr. LeRoy Broun asked Dr. Boldt whether, in his vaginal hysterectomies, he closes the wound of the vagina or uses gauze packing.

Dr. Boldt replied that he closes the wound of the vagina and, in answer to another question, stated that he would not let his patients up at the end of a week if he used gauze drainage.

A Specimen of Ectopic Pregnancy.

Dr. E. E. Tull: This specimen was removed to-day from a patient at Cancer Hospital. Multipara about thirty years old; some six years ago she had left tube and ovary removed because of gonorrhœal infection that had extended to her pelvis. I am informed the other side would have then been removed had she borne the ether well. She improved after this operation, although her periods were very irregular. I saw her for the first time four days ago and learned that she had missed a period three weeks ago and a week later began to flow; this continued until her operation to-day. She had a great deal of pain in right side, with sinking feeling, cold sweats, etc. Ectopic gestation was diagnosed, and to-day I removed this specimen by abdomen. I chose the abdomen because I thought the appendix involved, which was not the case.

There were a number of adhesions around the mass, yet no blood in abdominal cavity. The tube had not ruptured nor the ovum, which was the size of a walnut, and on cutting it open I found this perfect fœtus. I also present the uterus, which was not curetted.

A Case of Vaginal Hysterectomy with the Use of the Grad Suture.

Dr. Thomas Addis Emmet reported the following case:

I wish to place on record a case of vaginal hysterectomy performed by me two weeks ago for an extensive epithelioma. In the case itself there was nothing of special note; it was essentially a bloodless operation, and convalescence was uneventful. My object in reporting the case is to bear testimony to the worth of the *Grad suture*, which is beyond question a most valuable surgical procedure. In the case under consideration some seven ligatures, I think, were used; the first was removed without difficulty during the second day, and all were taken away within a week. While I believe this means of securing the vessels and removing at any time the ligatures is applicable to all cases where the operation is done by the vagina, it is limited in its application when the removal of the uterus is by the abdominal route. A week ago I operated for the removal of a fibrous tumor, a part of which had

already degenerated into sarcoma, and I regarded it safer, from the size of the uterus, to remove it by abdominal section. In this case the Grad suture would not have been applicable, for, after securing the ovarian and uterine arteries and removing the entire uterus, the delay was great in checking the oozing from the hæmorrhoidal veins. In such a case the number of strands which must accompany each ligature would have greatly complicated the steps of the operation. On the other hand, the large number of ligatures which had to be used must remain buried and will be liable to give trouble at some future day.

Discussion.

Dr. J. Duncan Emmet stated that Dr. Herman Grad, an interne of the Woman's Hospital, New York, and who has devised a new suture for use in hysterectomy, was present as a guest, and he moved that the Society extend to him an invitation to read a paper on the subject of his device.

Motion seconded and carried.

A Method of Untying the Knots of Silk Ligatures.

By Herman Grad, M.D.

(See page 105.)

Discussion.

Dr. T. A. Emmet said that his theoretical criticism on the ligature had been that when it was wet it would be difficult to get it out, but he found that the wetter it was the easier it was to remove it.

Dr. Broun said that he assisted Dr. Cleveland at the first operation at which this ligature was used, and they were applied without any trouble. Dr. Cleveland's preference is to take the usual ligatures off the arteries, when he uses electrodes to cut them, at the end of forty-eight hours, but in this case, fearing they might come off hard or not at all, owing to the fact of their being wet, he let them go five days without attempting to remove them ; then he removed them without any trouble whatever. The traction strings untied the ligatures readily and they came away beautifully.

Dr. J. Duncan Emmet said that Dr. Thomas Addis Emmet was

the first operator to remove one of these sutures. He operated the day after Dr. Cleveland, but removed the first suture the day before Dr. Cleveland removed his, in forty-eight hours after operation. The speaker removed the subsequent sutures in Dr. Emmet's case. They were removed without very much difficulty. There was some difficulty experienced in opening the knots, but it was due to another cause. Dr. Emmet, having used the double ligature several times, *i.e.*, tying a knot on each side of the mass and carrying one end of the double ligature round the mass again to the opposite side for greater security, it was a little difficult to loosen the knots in these cases, though he succeeded here also with a little patience, and that was the greatest test. Think of a ligature being tied with a Grad loop, carried around the mass again and tied on the other side, and yet being capable of removal by these loops. He regards this new suture as one of the most original procedures he has heard of in a long time. His great fear was that when it was actually put into practical operation there would be slipping, or, if it did not slip, that it would not work easily and cause traction upon the mass, but there has been absolutely no difficulty experienced in removing it, due to the use of the device itself. Dr. Grad has now reported four cases, and is collecting a number of others.

The President said that, as he understood it, the first case was one of abdominal hysterectomy. Dr. Emmet has made the criticism that he thought it would not be so successful for use in abdominal work. It appeared to the speaker that there would be one fault very apparent in its use in abdominal work, which is that the sutures have to be carried to an opening. The abdomen could not be sealed up ; some place would have to be found for the sutures to get out. If not taken out through the vagina they would have to be taken out through the wound, and he questions whether it would not be better in such cases to cut the ligatures short and leave the abdomen closed rather than to run the risk of infection by leaving it open.

Dr. J. Duncan Emmet said it was only intended to take the place of the long suture with through and through drainage.

Dr. Tull said that as a matter of mechanical device he could not criticise it, but his idea is that every additional string put down there adds more danger of infection. The only thing he could criticise would be to have those six or seven strings extending down. That would be a source of possible infection. From the

point of removing the suture in forty-eight hours he would regard that as dangerous surgery. He had tried to remove clamps in forty-eight hours and had frightful hæmorrhage, so he never attempts to remove a clamp from any blood-vessel in that time.

Dr. Grad (in closing) said that, as to abdominal cases where the vagina is not opened, the use of his ligatures is questionable. They have not been tried in these cases, but he thinks they might be brought out through the abdominal incision and removed from forty-eight to seventy-two hours after operation. The abdominal wall could then be closed by tying the temporary sutures introduced for that purpose at the time of operation. As to Dr. Tull's remark about the ligatures becoming infected, he wished to say that they are removed at such an early date that there would be no time for the occurrence of infection in the ligature.

Dr. J. Duncan Emmet said there was one more point he desired to allude to, and that was counter-pressure. Counter-traction should be made upon the part when removing the ligature, which would obviate any trouble which might come from traction upon the part in early removal. By placing the finger against the part and then pulling on the suture one could remove it without any pain to the patient whatsoever and obviate traction.

Vaginal Ligation of the Uterine Arteries for Fibroids of the Uterus.

By A. H. Goelet, M.D.

(See page 140.)

Discussion.

Dr. Henry J. Garrigues said that he had an opportunity of examining this last patient, and takes great pleasure in reporting that the uterus, when he examined it, was only very slightly enlarged. He did not use any sound, but is satisfied that it could not be deeper, as Dr. Goelet says, than three inches, and there was certainly no tumor to be felt. Taking into consideration the other remedies, every proposition to treat uterine fibroids in a new way should be welcomed. The medicinal remedies may be looked upon as almost without value, or at least only of value as adjuvants. The galvanic treatment is not always effective. The extirpation of the ovaries is not always feasible, is often dangerous, and what is worst of all, does not always lead to the arrest of the growth. Still he does not think that operation should fall into

desuetude, as to a great extent it has by the progress of hysterectomy. Hysterectomy is often a most difficult operation, has a mortality in the most skilful hands of nearly six per cent., and in less skilful hands it will of course be much larger. Taking all this into consideration, the profession has every reason to welcome this operation, proposed by Dr. Martin, of Chicago. It is a very great advantage that the woman keeps her tubes and ovaries. It is not only that she does not lose her sex and may bear children, but he has in view as well the avoidance of the great suffering which they often have after the removal of the ovaries and after the removal of the uterus. The premature induction of the menopause is often accompanied by very great suffering. He has had many of these patients operated on by himself or others who have needed medical or electric treatment or secondary laparotomy for adhesions. He desires to ask whether the doctor has performed the operation on virgins ; if in the virginal vagina he got room enough, or whether it is necessary to make an incision of the perinæum in order to obtain more room. The question that cannot be answered yet is how long the good effect will last. The longest time that has yet elapsed, so far as he knows, is two years. He will say that as long as there is the blood supply that comes through the ovarian artery he is not satisfied that ligation of the uterine artery will permanently arrest the growth.

Dr. William M. Polk said that an interesting point in the procedure is the report made by the reader of the paper in the case in which but one vessel was ligated. A good many have been deterred from the operation by the fear of necrosis, and while that may not be a very well-founded fear, the reports which have come of the same difficulty occurring in the ligation of the ovarian vessels, arguing from analogy, has induced many to believe that there might be a similar danger here. Assuming that such is the case, the accidental case which the doctor narrates, in which but one vessel was involved in the original operation, offers a way out of the difficulty to those who are disposed to look favorably upon the operation, because it is hardly fair to infer that he would get an appreciable necrosis where but one vessel was ligated, unless the procedure is adopted which the doctor seems to lay down, namely, of curettage. The speaker would be a little apprehensive about inflicting injuries upon the interior of a uterus whose circulation he intended to so seriously impede there and then. That, again, will be a theoretical objection, but in certain cases where disas-

trous results have followed curettage—that is, necrosis of the growth—it could only be attributed to the impairment in the circulation of the organ as a whole. He presumes the doctor does not intend to lay that down as a routine measure to be resorted to in all cases, but it is suggested as a necessity in many of them. The next question, of course, is the manner in which the vessel is treated. Unquestionably the plan proposed is an efficient one—that is, to secure the complete severance of the vessel. The suggestion made by Dr. Garrigues as to the virgin is one which would embarrass any operator, and under those circumstances he might be prompted to enter Douglas's *cul-de-sac* and search there for his vessel. He presumes that while the author of the paper holds with us all that it is wiser not to invade the peritonæum, at the same time, rather than secure the vessel imperfectly, he would permit that step. The speaker also feels that there might be some embarrassment in securing a sufficient amount of space between the region of the ureter and the region of the side of the uterus for the application of the two ligatures between which it is proposed to cut, unless it is possible to get the lower segment of the uterus sufficiently well down to make a good dissection and secure fair access to the growth. The class of tumors alluded to usually permit the uterus to be drawn down sufficiently well to give that advantage, but there is no doubt it is not an easy matter to isolate and doubly ligate the uterine arteries here, ligating one point sufficiently far from the other to permit one wisely to cut between. Of course, if it is possible to isolate the ureter and push it aside in the first instance, it is a different thing, but that involves more extensive dissection than the author has suggested. There is no doubt that the operation is a very tempting one, for the very reasons that Dr. Goelet and Dr. Garrigues have stated, and he himself would feel very much more like resorting to it at once in all those doubtful cases of fibroid than to curettage, or certainly than to any more severe treatment.

Dr. E. B. Cragin said that there might be a field for this vaginal ligation of the uterine arteries in fibromata, especially where there was ground for postponing a more radical operation, or where a more radical one was refused. He had seen only one case where he felt like advising it, and yet in that case it was very satisfactory. The woman had been only recently confined and she had a fibro myoma in the uterus which enlarged during the pregnancy, and after parturition prevented normal involution. Here

was a case with a fibroid in the uterus, with the uterus very slow in contracting, and it seemed to him that it was a case where by limiting and diminishing the blood supply she might be relieved of her symptoms and brought back to the state in which she was before she became pregnant, when she had no symptoms from the tumor. For that reason he advised the ligation of the uterine arteries from the vagina. It was done by the gynæcologist in attendance, and the result was satisfactory. She was symptomatically cured. That was done a year and a half ago, and as far as he knows no symptoms have recurred. He does know that she was relieved of all symptoms months after the operation, and although he has not heard from her for a number of months, the last time he did hear she still continued in her relief.

Dr. Boldt said that he received the notice of the paper rather too late to look over the cases or to see the patients on whom he had performed the operation. He thinks he can answer some of the questions which have been asked. To a virgin with fibroid myoma of the uterus the operation is not applicable at all. Furthermore, it is not applicable for a fibroid in the lower segment of the uterus, especially that class which are developed in the broad ligament. It is applicable only in a limited class of cases, which are these: If the tumor is of moderate size, and the woman has a sufficiently roomy vagina, and the condition of the pelvic floor is such that the uterus can be brought down sufficiently so that the respective uterine arteries can be reached. As to the technique of the operation, he would raise the very serious question which has already been asked by Dr. Polk with regard to the proximity of the ureters—can the ligatures be placed in such a position as to cut with safety between them? He personally sees no reason why two ligatures should be placed. Some time ago Dr. Gottschalck and Dr. Franklin Martin, of Chicago, made a number of experiments, and they came to about the same conclusion as far as the utility of the operation is concerned, with one ligature, but the operation is certainly limited, and must remain limited. On two of the patients, where he tied the uterine arteries in the beginning, he has been subsequently compelled to do an abdominal hysterectomy, for the reason that for three or four months the hæmorrhages ceased and then they began again, and what he thought was a diminution of the size of the tumor subsequent to the ligation of the arteries was simply a failure on his part to recognize the proper condition. It is well known that about the

time of the menstrual period very many uterine fibromata will enlarge, and after such time will decrease in size again, and that happened to be the case in these instances. He does not say the operation has no field ; it has a field, but it must be a limited one, and he will never again attempt to operate on a virgin by tying the uterine arteries.

Dr. H. L. Collyer said that he had the pleasure of examining this case, and was very favorably impressed with what was said to be the result of the operation. The uterus seemed to be two and a half inches long, or a little smaller than a normal uterus, but there seemed to be multiple fibroids posteriorly and to one side, sub-peritoneal and interstitial. As Dr. Boldt has said, the operation has only a limited field. In fibroid tumors that are sub-peritoneal, especially at the fundus where adhesions have occurred, ligating the uterine arteries or any other arteries is not going to stop the tumor from growing or reduce its size ; but small tumors, principally those posterior to the uterus, or that get their blood supply from the uterine arteries, will be checked in their growth, and if they follow the cases Dr. Goelet has stated, they will reduce in size. At the present time it is too early to state whether those cases will uniformly follow that one course. He agrees with Dr. Polk that he would look with some apprehension upon tying the uterine arteries for fear of necrotic conditions. It is known that in cutting off the circulation sometimes these tumors undergo necrosis and break down into an abscess, which complicates the matter seriously. As Dr. Boldt has said, one ligature is sufficient ; it stops the circulation, and that is all that is necessary. To be successful there must be an accurate diagnosis of the condition, and it is impossible to make such a positive diagnosis that you can shut off the likelihood of there being any adhesions whereby the tumor is supplied with blood, and in such a case the operation apparently would fail, and yet the failure would not be due to the lack of cutting off the circulation from the uterine arteries. He thinks the operation has a future, but it is limited.

Dr. Ralph Waldo spoke of the unimportance of putting on two ligatures. It is not necessary to include a lot of tissue, and you can shut off any artery in any part of the body by putting one ligature on it. If he remembers the anatomy correctly, the ureter there is anywhere from one half to three quarters of an inch—some say five eighths of an inch—from the side of the uterus ; and if you are going to do some dissecting and put in a pair of forceps

on both sides a pretty good chance is run of including the ureter. He had never done the operation, but he could see that, in a certain limited number of cases where one is called upon to do an operation, this one might be resorted to. Under present methods hysterectomy is not as serious an operation as some think, when the patient is in good condition, and he thinks the tumor should be taken out and the patient sent home rejoicing. At the same time, he wished to state that in his opinion a large number of fibroids do no harm at all, and the least done for them the better. Of course there are others that require treatment.

Dr. GOELET (in closing) said that the only proof he could offer that the tumor extended to the umbilicus was the evidence of his chief of clinic, who was present, and the record of his clinic book. He had not for one moment thought that his statement upon this point would be questioned. That was the size of the tumor when the patient first came under his observation in May last. The first case he mentioned in the report was that of a virgin. It is true she had been examined several times before, and when he operated on her she had not a hymen, but he had no difficulty in that case in reaching and tying the arteries. He ligated the artery in two places on each side, but did not divide the vessel. The ureter at this point is at least a half inch away from the uterus. By dragging the uterus down and pushing the ureter to one side with the finger, you can get plenty of room to put on the second ligature. He had no difficulty whatever, and had never wounded nor included a ureter in the ligature. His reason for dividing the artery after ligating was because in some cases he had gotten only a moderate diminution in the size of the growth, and he thought, on subsequent examination, that the circulation in the uterine artery had been restored. His explanation was that by including so much of the tissue of the broad ligament as one is obliged to do, the circulation might only be obstructed temporarily, and the ligature loosening as the tissues shrink the circulation through the artery would be restored. In those cases where he had resorted to this method of procedure and divided the artery he had gotten better results. Referring to the statement of Dr. Collyer that that there was still some evidence of fibroid in this uterus, if there is the speaker could not make it out, nor could the other two gentlemen who examined the patient. He will be glad to present the patient at the next meeting of the Society and have her examined. She had promised to be present at this meeting, but was men-

struating. As to the restriction of the operation, he limited it, as stated in the paper, to interstitial fibroids not extending above the level of the umbilicus, and sub-peritoneal fibroids springing from the uterine wall below the fundus. In all of these cases he has gotten some reduction in the size of the growth, and in none of them had there been a recurrence of severe hæmorrhage. The fact may have been that thorough curetting at the time of the operation was sufficient to relieve that symptom, but he does not think it was sufficient to account for the amount of reduction obtained. As to the danger of necrosis, he believes that Dr. Martin, of Chicago, and Byron Robinson have reported cases where they have ligated not only the uterine arteries but one of the ovarian arteries at the same time, and still these has been no necrosis. At any rate, there has not been the slightest evidence that necrosis has followed the operation in any of there cases. It seemed to him that the principal advantage of the operation is that the patient is neither unsexed nor mutilated ; and that many patients will consent to an operation of this kind when they will not consent to a hysterectomy.

Official Transactions.

A. M. Jacobus, *Recording Secretary.*

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, December 18, 1896.

The *President*, Addison H. Foster, M.D., in the Chair.

On Inflammation of the Uterus, etc.

(Discussion postponed from the November Meeting.)

Discussion.

Dr. William H. Rumpf : If the papers read at the last meeting were all printed they would form a handbook of gynæcology because of their completeness. They covered the whole field of pelvic inflammation very thoroughly, and consequently there is very little left to be said. For didactic and clinical purposes it would be well to have a subdivision of the various forms of pelvic inflammation. Rouge's division depending upon anatomical bases would seem the most natural—that is, the various forms of glandu-

lar, interstitial and diffuse, and the various forms of endometritis deciduæ, endometritis post-partum, and endometritis exfoliativa. In practice, however, it is not possible to make these subdivisions, because it would make necessary an anatomical examination of the endometrium, and that is usually impossible without a curettement, which is usually done for curative purposes.

As regards the division by Winckel and various others, according to the etiology, especially the bacteriologic etiology, it is impossible at the present time for us to form a perfect nomenclature, as we are not sufficiently advanced to determine how the etiological factor causes certain forms of endometritis. It is better to continue, for didactic purposes, the old classification according to the anatomical basis until the etiology is better known.

The pathological anatomy of the various forms of endometritis is a very extensive subject, and I think I can illustrate it best by showing various specimens of endometritis. I have put up in the next room about twenty slides which show all the different forms of endometritis, and illustrate what is meant by the different names given to them. The specimens need no further explanation, and all of the members are welcome to look at them. They will describe the pathology better than I can.

Dr. Henry P. Newman : In general, discussions, that follow a month after the papers have been read, lose a great deal in force and application, and personally I am unable to retain much of the subject-matter that was presented here at the last meeting.

Prophylaxis, I think, was entirely overlooked. I will refer to it briefly under four heads : 1. Prophylaxis at the formative stage of puberty or girlhood. 2. Prophylaxis by practising absolute asepticism in treating gynæcological cases. 3. Prophylaxis relative to puerperal cases or to the management of childbed, miscarriages, and the like. 4. Prophylaxis relative to gonorrhœal infection, which includes a sociological problem. I will not elaborate any one of these. The Chicago Medical Society has had a very forcible and unusual presentation of the subject of gonorrhœal infection. The question is whether we, as gynæcologists, and this society as a representative one, have done and are doing what devolves upon us in the nature of prophylaxis along these lines. The subject " Inflammation of the Uterus" was presented by this society in a very thorough and attractive manner ; but I regret very much that prophylactic measures were not brought out more forcibly and considered at greater length. The subject is still be-

fore us, and I would like to hear a free discussion along this line.

Dr. C. S. Bacon : In closing, I will confine my remarks to a brief consideration of the intimate and necessary relation between diagnosis based on a good classification and treatment. A proper classification of the so-called inflammation of the uterus is essential to the establishment of rational principles of treatment. The various infections are combatted in different ways, and hyperplasias of the uterine mucous membranes require quite different treatment from infections.

In the case of infections *prophylaxis* is most important. Puerperal infection is best prevented by securing as perfect subjective disinfection as possible, by avoiding all unnecessary internal examinations and operations, by avoiding dangerous lubricants and by disinfecting the external genitalia. Prophylactic vaginal douches do more harm than good unless examination shows the presence of gonococci in a vaginal discharge. In this case an attempt at disinfection of the vagina should be made.

Non-puerperal, non-venereal traumatic infection is generally due to gynæcological manipulations, and can be avoided only when the gynæcologist thoroughly disinfects his hands and boils his instruments before he makes internal examinations.

Prevention of venereal infection is a problem for whose solution the combined efforts of physicians, sociologists, and legislators are needed. One point may be emphasized, viz., that no man should be pronounced free from gonorrhœa until bacteriological examinations are negative, even after the use of some artificial excitant to produce a recurrence of a checked discharge.

In regard to the *treatment* of an existing *puerperal infection*, we first notice that a differential diagnosis between a simple toxanæmia and one complicated with a bacteriæmia cannot be made with certainty. In the former case the careful removal of the saprophytes from the surface of the uterine mucous membrane with the decidual *débris* in which they grow is indicated. This is most safely accomplished with an intra-uterine douche of sterilized water or salt solution. A curette which carries away Nature's protecting leucocytic wall is absolutely contraindicated. Thomas's wire curette, which would remove loosely adherent pieces of placenta or decidua, might perhaps at times be of service. The dangers of the intra-uterine douche come from an infected tube, from lack of return flow, and from wounds made by the introduction of

the tube. The first two dangers can be avoided by using Kelly's modification of the Fritsch-Bozeman tube, and the last by careful introduction of the tube with the patient in good position.

In a bacteriæmia the douche may be of no value, but because the diagnosis can never be made with certainty, it should be given to be discontinued as soon as the nature of the disease is determined. Then we are dependent on supporting treatment. General immunization by streptococcus serum or the production of general leucocytosis are measures not yet beyond the experimental stage. The vaginal evacuation of a secondary pelvic abscess is indicated, but a hysterectomy for a suspected phlegmonous uterus is too grave an operation where the extent of the general and lymphatic infection is quite unknown.

In *acute non-puerperal infection* of venereal or non venereal origin we should rely on the so called antiphlogistic treatment which consists in aiding the reactive powers of nature.

The indications for treatment of the *chronic infections*, in cases of chronic endometritis of bacterial origin, are : first, to destroy the infecting microbes ; second, to remove their products, and the *débris* in which, at least to a certain extent, they grow ; third, to assist the bactericidal efforts of nature. Experience has shown that it is impossible to meet the first indication, owing to the deep penetration of the microbes into the tissues. The second and third indications are met by providing for good drainage through the correction of mechanical obstruction and thus securing the removal of the mucus and *débris* of the uterine cavity, and by stimulation of local leucocytosis by weak irritants like alcohol or tincture of iodine.

In *hyperplasia* we have to do with structural changes of greater or less extent. The removal of this pathological membrane is often indicated. This may be accomplished in part by the curette. Following the curette a strong caustic like zinc chloride thirty to fifty per cent. may often be necessary for a sufficiently radical removal.

This brief and necessarily incomplete synopsis of the chief indications for treatment of the various so-called inflammations of the uterus and of the measures necessary to meet these indications proves the value and necessity of an etiological classification. The failure to distinguish between the indications for treatment of infections and hyperplasias has often led to improper use of the curette in infections. A study of so-called inflammations

from this point of view is suggestive, and promises to lead to much greater advance in treatment.

Dr. T. J. Watkins (in closing) : I have nothing to say except to remind Dr. Newman that the prophylaxis of endometritis received some consideration in my paper read at the last meeting of the Society.

The Pathology of Unintentional Abortion.

By Karl F. M. Sandberg, M.D.

(See page 145.)

On motion the discussion of this paper was postponed until Dr. Weston reads his paper on the "Prognosis and Treatment of Unintentional Abortion."

Thyroid and Ovarian Therapy in Gynæcology.

By C. B. Stehman, M.D.

(See page 128.)

Discussion.

Dr. James H. Etheridge : I regard the paper of Dr. Stehman as a very valuable one, and believe it is in the direction of restorative medicine. I think it may be called that, as I hardly know by what term to denominate it. We are on the threshold of work in this line. We all remember the writings of Brown-Sequard on a subject akin to this, and how the medical journals at the time were filled with articles on the subject. At one time it was the subject of sincere, earnest discussion and a good deal of ribald jest, and it has fallen into a condition of desuetude. We are now in a position again to study this matter seriously. I believe the thyroid, ovarian, and testicular extracts are in character restoratives. Brown-Sequard stated what is known as a simple physiological fact, that all of the organs of the body contribute to make perfect blood ; that each one yields a secretion, and all contribute to make the blood perfect. If one is deficient in secretion, the contribution to the blood is deficient that much. Sooner or later we are going to have the practice of medicine put on a more rational basis. We all know that proximate principles are essential to life. We know there are certain diseases—we will call them constitutional diseases if you please—and that these proximate principles,

when introduced into the blood, take away the diseases and restore the system. For instance, in chronic enlargements of the tonsils in children, there is a restorative medicine that will take away these enlargements. So if I had time to think over the subject, I could cite many illustrations.

It would be interesting to know how the thyroid extract does its work and what the effect is upon the blood. What is needed next will be to make a careful analysis of the blood of these patients with a view of determining the proper proportions to be used of the extracts if the deficiency is not restored.

We are just entering upon the transitional stage between the old and new. Articles are appearing in the medical journals of Europe and of this country concerning this subject. The next generation will witness a great improvement in the practice of medicine. Take the case that Dr. Stehman mentions of the secretion of the ovary itself. I suppose he included in that the process of ovulation. I believe there is a contribution to the blood from the substance of the ovary itself which has not been demonstrated yet, and I believe if the ovaries are diseased, if the secretion is diminished in any way, the deficiency will be manifested in dysmenorrhœa, menorrhagia, and the like. We find a certain condition of the blood-vessels and in the structure of the uterus removed for disease which we call pathological.

Dr. Franklin H. Martin : I am very much interested in Dr. Stehman's paper, and I desire to ask one or two questions. First, did the doctor administer the extracts to other patients than those recorded ? I believe there were six cases reported, and the results were so uniformly good that I would like to know if the extracts were given to other patients and were followed by the same results. I would also ask the name of the firm who prepared the extract and the form of tablets used.

Dr. C. S. Bacon : While I can add little or nothing of value to this discussion from my own experience, still, as I had the opportunity of becoming acquainted with the study and practice of Professor Chrobak in this line of treatment, it may be of interest to refer to his work. As is known, some three or four years ago he became so thoroughly convinced of the value of the ovaries that he instituted a line of investigation, with the aid of his assistant, and at the same time began to leave in all cases of cœliotomy a portion at least of the ovary. In all of the laparotomies that I saw made by him, where there was even the smallest particle of

ovary that was apparently not diseased, it was left. As many of you know, his observations were published in a preliminary report some months ago, in which he states that he is quite firmly convinced of the value of this procedure. At the same time, he began the administration of sheep's ovaries to patients whose ovaries had been removed and who were suffering from the consequent nervous disturbances, and also to patients that suffered from similar disturbances from disease of the ovaries with curative results. His assistant began a series of investigations on the results of implanting pieces of ovary in animals, inserting them both in the peritonæum and also under the skin. When ovarian tissue was inserted in the peritonæum they generally disappeared, but when inserted under the skin they formed an organic connection, and he has shown that manifest traces of ovarian tissue were found weeks and months after being inserted under the skin.

It seems to me, however, that in all of these cases we must always be on our guard with reference to the enthusiastic representations of patients, and all of the cases that are reported should be carefully investigated, and an attempt should be made at least to distinguish between diseases of the ovary and of the uterus. We should also determine the condition of the uterine mucous membrane. It would be interesting in such a report as this given to-night to have the microscopic findings of the uterine scrapings always appended.

I have one case to report that was so striking that I might mention it in spite of the fact that an exact diagnosis was not made. It was the case of a young woman, twenty-six years of age, who had suffered since puberty, which occurred about ten years ago, with severe dysmenorrhœa. The pain was so persistent every month that there could be no question as to the seriousness of the trouble. No internal examination was made, and hence no exact diagnosis was arrived at. On account of the appearance of a goitre I gave her thyroid extract, and thereafter there was absolutely no pain during her following menstruations. As the thyroid extract did not seem to reduce or benefit the goitre, although it was used for a month, I changed to the thymus extract, which also had no effect on the goitre, but the patient continued to improve, and at the end of seven or eight months menstruation was absolutely normal.

I report this case, in spite of the fact that a differential diagnosis between ovarian and uterine dysmenorrhœa was not made.

Dr. O. B. Will, Peoria, Ill. (by invitation) : I am very much obliged for the courtesy of being asked to participate in this discussion. I do not think I can add anything of special value, although I was deeply interested in the paper presented by Dr. Stehman. However, I want to say that it seems to me the therapeutics of the profession, or the practice of medicine in its therapeutic aspects, has never been in such a chaotic state as at present. Amid the thousand and one bacterial and other organic elements from the outside and inside, the extracts, the secretions, and their inter-relations, hypnotism and Christian science, I am decidedly bewildered. I have endeavored to utilize more or less the various substantial organic products that have been brought to the notice of the profession. In some cases I have seen apparently good results follow their use, especially of the thyroid extract, while in others I have seen the opposite. There seems yet little basis for accurate deduction. So it is with all innovations in medicine. It requires a great deal of investigation to get anything that is of practical value.

I recalled to my mind during the reading of the paper a case that occurred in my practice about four years ago, almost identical in its history with that of the first case described by the author of the paper. A curettement was done twice, and I was unable to secure a satisfactory result. Subsequently I was informed that the patient had gone into the hands of a Christian scientist, and has now been well for two years. I have come thus to be decidedly sceptical respecting conclusions that do not take into consideration mental impressions and influences, especially when they approach so nearly the borderland of the severely problematical.

Dr. Stehman (in closing) : I have concluded that the products of Armour & Co. are the best to use. It is sold in ounce bottles, and contains five grains of the extract to each tablet. This is what I have used. I know these extracts have been used hypodermically, but for practical use the tablets of Armour & Co. have served my purpose.

I have used these extracts in probably twelve cases, and I had much hesitancy in reporting these cases to-night, as I am aware there is a great deal of enthusiasm in the first reports, and as my observations have been limited I was a little reluctant in bringing them before you.

As I stated in the closing sentence of my paper, I think the value of these extracts can only be ascertained when we get a bet-

ter idea of their physiologic action. We know that removal of the pancreas, the thyroid, and the adrenals mean death of the individual. We know, too, that the removal of other glands produces profound nutritive disturbances ; and it seems to me these facts should be sufficient reason why we should pursue our investigations along this line. There is no speculation about the results of the removal of these glands.

Dr. Henrotin : What about the preparation of the ovarian extracts ?

Dr. Stehman : Armour & Co. prepare the ovarian extract from the ovary of the sheep, the thyroid extract from the thyroid gland of the same animal, and the testicular extract from the testicle of the ram.

Each tablet represents a definite quantity of carefully selected raw material reduced by a process of desiccation previous to being incorporated into tablet form.

Artificial Dilatation of the Parturient Canal in Labor.

By J. C. Hoag, M.D.

(See page 158.)

Discussion.

Dr. Frank A. Stahl : I am pleased to have heard the paper of Dr. Hoag, especially the part of it which treats of dilatation of the inferior outlet. Theoretical objections are often made to the introduction of tents and instruments, that they endanger infection. In labor at the third, fourth, and fifth months the subject of dilatation is often a serious one. I have used tents so extensively in these cases that I am surprised to hear they should be considered objectionable. I have never used the bags for dilating the uterus because I have gotten good results with tents, especially in abortions, with retention of the placenta. In cases of hæmorrhage I have had excellent results from the introduction of tents. My experience has been extensive among poor people, where the conveniences for treatment are limited. After the use of tents in these cases, if the placenta is not expelled it is easily removed.

Dr. Hoag has covered the subject very well as regards placenta prævia and eclampsia.

As regards cicatrices, the knife may be used, or, as the doctor

has suggested, if we have plenty of time, the tampon may be used. I have never yet seen a case where, by waiting, with guiding the head a little, instructing the patient to walk up and down, to assume the erect attitude, it was necessary to use a bag for dilating purposes either in the vagina or cervix. These cases include a great number of virgins and extractions and a smaller number of forceps extractions.

An important obstetrical question to be considered is how to dilate the outlet. Shall episiotomy be central or lateral? Two years ago, at the meeting of the American Medical Association, held in Baltimore, I read a paper in which I took the position that Nature would adopt a central line of incision. I believe the doctor says he was guided by Nature and so adopted Nature's method, and then dilatation was attained to such an extent as to allow the head to be delivered without laceration. We all know the objection to the lateral episiotomy. I venture to say that nearly every one in this room who has used lateral episiotomy has rejected it. Some of the French authorities call attention to the fact that when a lateral incision is made laceration is liable to extend more deeply into the tissues, and thus pockets are formed which increase danger of sepsis. Repair of the laceration is not so easy after lateral as after central episiotomy.

In patients with a rigid outlet, where it is imperative to terminate labor rapidly, I perform central episiotomy rather than produce terrible lacerations by lateral incisions.

I should be glad to learn if there is any way by which infection is known to follow the use of laminaria tents.

Dr. Henry P. Newman: I cannot agree with the last speaker that sea tangle or laminaria tents are the most effectual agents for dilatation in the class of cases in which he uses them. I think better results can be effected and in a more physiological manner by internal therepeusis without local manipulation of the organs. In such a case as Dr. Stahl speaks of, I should have given the patient a large dose of chloral, possibly morphine, and upon a second visit made at about the time at which he withdraws the tent, I should not only expect better result as regards dilatation, but I should feel confident that the cervical canal had sustained no injury or infection. The abrasions that may occur from the repeated introduction of tents and the necessary protracted manipulations I consider unwarrantable.

The methods of rapid dilatation of the genital tract have been

presented most thoroughly and adequately by the essayist, and I have nothing further to add unless to suggest the use of glycerine, which has been recently advocated. It is claimed to be a very valuable agent in stimulating the uterus to painless contractions and to dilatation of the cervical canal.

In another class of cases, as in stenosis of cicatricial origin or in stenosis that will not yield to any therepeutic agent other than rapid dilatation, I should prefer anæsthesia and the use of steel dilators. The entire technique, including the delivery of child, can be carried out at one sitting, with each step in the operation under the immediate control of the operator.

Dr. Fernand Henrotin : This paper is a plain, well-presented *résumé* of the subject, and he has given us a very sensible and rational exposition of the methods in vogue. At the risk of being called an old fogy, I call attention to the old-time methods. I refer particularly to dilatation of the rigid cervix in a physiological labor where it is supposed that rapid dilatation is desirable because the patient is exhausted. In the cases indicated by the doctor, where pathological conditions exist and where the indications are plain, we must not forget that we are apt in either haste or a desire to terminate labor to go a little beyond the physiological lines. A woman who is exhausted by labor is very frequently better cared for by giving rest than by dilating the cervix. Any one who has observed a large number of labors, when there is rigidity of the os and when the woman is exhausted, knows how perfectly labor frequently progresses after an enforced rest. I speak from a large obstetrical experience, and with an aversion to unnecessary manipulations in labor.

As regards episiotomy, for quite a number of years I was in the habit of doing the lateral operation for the purpose of preventing laceration. I first used the lateral incision, but for quite a number of years I have never used anything but the straight middle incision, which I consider infinitely superior to the lateral operation. I believe that lacerations are more frequent, deeper, and more difficult to repair after lateral than after median episiotomy. Any one who has resorted to the lateral incision and then afterward to the middle incision will recognize how more perfectly a middle simple incision can be repaired.

As regards the question raised by Dr. Stahl about the use of tents. Judging from my view, and the reports I have seen and heard, the use of tents of any kind and by any method is abso-

lutely wrong. I have seen deaths and all varieties of sepsis from slippery elm, laminaria and sponge tents.

Dr. C. S. Bacon : I will not refer to the many good points in the paper, nor discuss the important question of the use of the bags of Champetier or other distensible bags in the dilatation of the vagina, but will confine myself to one point in which I differ with the essayist—namely, the question of incision of the cervix. I do not understand that Dr. Hoag intended to give complete indications for the operation of dilating the cervix ; but granting that the operation is indicated on account of some serious pathological condition, how shall it be dilated ? It is necessary that we should determine whether the upper or lower portion of the cervix required dilating. This is an important question in deciding upon the operation of incision or of dilatation by means of a bag. If the upper part of the cervix is distended, as frequently occurs in primipara where the cervix is thinned out to the vaginal insertion, with the external os closed or nearly so, we have a different condition from that which exists when the internal os is closed, as happens in multipara when the internal os is not at all dilated, but the external readily admits two fingers. In the latter case incision is contraindicated. In the former case, in primipara, I think it has been pretty well shown that the incision may be the operation of selection, being quicker and less harmful than dilatation.

A word or two in regard to the technique of incision. The originator of the operation of incision of the cervix, Dr. Dührssen, finds it unnecessary to introduce a speculum or to take hold of the cervix with a tenaculum. It is sufficient to grasp the cervix between the fore and middle fingers and make the incision on the volar surfaces of the fingers. What shall be the extent of the incision ? The recommendation of Dührssen is to make crucial incisions to the vaginal insertion, first posteriorly, then at the sides, and finally in front. Such incisions dilate the cervical canal completely up to the vaginal insertion, and there is much less danger of subsequent tear than when they are only superficial or extend to a short distance.

Dr. Hoag (closing) : I am almost disappointed that none of the members have criticised my paper. I do not even recognize the point of Dr. Bacon's criticism. I think nothing has been said by the speakers that is incompatible with the statements in my paper. As Dr. Henrotin has said, most of the subject has been beaten

over in the literature for years, as well as established in obstetrical practice. A portion of this subject, however, is comparatively new, and is worthy of careful consideration. The real point in the paper in which I am interested is dilatation of the vagina. I take issue with some of the statements I have seen in the literature by German obstetricians with regard to dilatation of the vagina. They say there is only one method of dilating this organ, and that is the cutting method. I do not think this is correct. Dilatation with rubber bags or with the hands are legitimate procedures. The former especially is one of which we find almost no mention in the literature of the subject. I do not believe there have been a great many cases reported where the vagina has been dilated in this way, and I am a little disappointed that some one has not criticised me in this method, because it involves more or less risk. I think I can take almost any parturient woman, who is at the beginning of the second stage of labor, where the vagina is still undilated and the perinæum rigid, and if the pains are efficient and the contractions are regular and expulsive in character, I can in a short time get the vagina sufficiently dilated and the perinæum softened for passage of the child. I have done this in numerous cases.

So far as my own experience goes, I prefer instrumental dilatation (and particularly dilatation with the rubber bags) to the various methods of manual dilatation, but I am willing to admit that there are certain cases where dilatation by the bags is not sufficiently rapid in overcoming the resistance of the cervix, and that there are other cases where it is not sufficiently powerful. For the artificial dilatation of the vagina and the distension of the perinæum I believe there is nothing to be compared with the rubber bags, and I see no reason why they may not be often used with great advantage in tardy and painful labor. In cases of this sort, when the patient was greatly exhausted before the second stage of labor had fairly begun, and when, of course, there was no dilatation of vagina and perinæum and the vaginal secretions were scanty, I have often introduced a bag into the vagina and distended it moderately with water for the sole purpose of shortening labor. In such cases we observe a very close imitation of the ordinary processes of labor. The water bag acts just as does the hydrostatic wedge furnished by the pouch of membranes. Dilatation of the vagina takes place as the bag is forced down by the contractions of the voluntary and involuntary muscles, the

vaginal secretions become more abundant, and finally as the bag is forced along the perinæum becomes stretched more and more until the bag is entirely expelled. If desired, it may then be reintroduced and distended still further with water, and left to be expelled a second time. Such treatment is usually very efficient. In the first place, the vaginal dilatation is usually accompanied by dilatation of the cervix, and as soon as the head has entered the pelvis it finds the resistance of the soft parts of the parturient canal reduced to almost nil so that the second stage of labor is quickly ended and with safety to the perinæum.

There are two dangers to be avoided—infection and rupture of the vagina. The first may be avoided by ordinary attention to antiseptic details. To guard against the second danger we must exercise great caution. We must consider the distensibility of the vagina, and not tax its tissues too much. The principal circumferences of the fœtal head are respectively 32 to 34 and 36 cm. The colpeurynter, when distended with sixteen ounces of water, measures about 30 cm.—that is to say, it measures this amount when not constricted, but when it is introduced into the vagina and then distended with water it becomes elongated, so that if subjected to much pressure it would probably measure considerably less than 30 cm. in its greatest diameter. Having determined to use the bag, it should first be tested to ascertain its integrity and strength when distended. It is best to fill it to the required point and then measure its circumference. The water should then be measured so that we may know just how much to introduce when the bag is *in situ*.

Judging from my own practical experience in obstetrics and from very extensive observation in the lying-in hospitals of Europe, I feel convinced that too little attention has been paid to the intelligent application of artificial means of dilating the soft parts of the parturient canal, and particularly the vagina and perinæum.

Dr. Newman: You do not think benefit is derived partially by stimulation of the physiological function, as well as from actual dilatation?

Dr. Hoag: That hardly enters into the scope of my paper. I discussed the mechanical methods of dilatation. The other methods are all in the literature of the subject.

T. J. Watkins, *Editor of Society.*

Official Transactions.

ABSTRACTS.

THE STATUS OF GYNÆCOLOGY ABROAD.

Great Britain.

A Case of Acute Septic General Peritonitis with Septic Metritis Treated by Antistreptococcic Serum ; Recovery.

Dr. R. R. Law (*Brit. Med. Jour.*, January 2, 1897) reports the following interesting case. A young woman, married three weeks, with normal menstrual history, when seen by the physician was suffering from menorrhagia. She had been flowing for nine days. At this time she began to suffer much pain in the lower part of the abdomen. There was also slight diarrhœa ; there was rigidity and tenderness over the lower part of the abdomen, especially over the region of the left ovary and the fundus uteri. The abdomen was resonant all over. Vaginal examination showed the uterus to be in position, the cervix and body were slightly enlarged and tender to the touch. The pulse was slightly quickened, and the temperature was 100°.

There was a history of exposure to cold and fatigue at the beginning of the period. Complete rest, hot fomentations to the abdomen, and small doses of opium were ordered. In three days the temperature and pulse became normal and the flow ceased.

Four days from the beginning of the attack symptoms of general peritonitis rapidly developed. The temperature rose, and the pulse became rapid and wiry. Diarrhœa returned, and a profuse purulent vaginal discharge tinged with blood made its appearance. The uterus was felt to be greatly enlarged, softened, and tender to pressure. The cervix uteri was swollen to twice its normal size. Hot fomentations to the abdomen and antiseptic vaginal douches were ordered. Brandy, opium, quinine, and bismuth were given internally. During the day the temperature was 104.5°. Slight diarrhœa continued, and there was retention of urine ; 3 c.cm. of antistreptococcic serum was then injected hypodermically. The condition of the patient prior to the injection was as follows : Tongue furred ; breath offensive ; temperature, 101° ; pulse, 116, small and thready ; inspirations, thirty-two to the minute ; abdomen distended, tympanitic, and tender ; a slight swelling could be felt in the left ovarian region.

One hour after the injection the temperature was 98° and the

pulse 92 and of better volume. The patient, who had hitherto been wakeful, now obtained two hours' good sleep.

On the day following, four injections of 3 c.cm. each were given with the same favorable effect upon the temperature and pulse ; the highest temperature was 100° ; highest pulse, 104. Slight diarrhœa continued, and vomiting occurred once. Urine voided voluntarily and free from albumen. Peritoneal friction could be detected over the whole of the abdomen. This sign was of the greatest importance in proving the general peritonitis. During the next three days the injections amounted to 35 c.cm. Improvement continued.

Two weeks later all of the symptoms had disappeared except the tenderness over the left ovarian region. The patient made an excellent recovery.

Remarks.—The injections were given beneath the skin of each limb in rotation. Urticaria appeared upon the site of the injections, but disappeared in four days. There was no other local reaction. The most immediate effect of each injection was slowing of the pulse, with improvement in quality. The author concludes that but for the serum injected the case would have terminated fatally.

Italy.

A Floating Spleen with Torsion of its Pedicle.

Dr. Amedeo Dogliotti (*Gazz. Med. di Tornio*, August, 1896) reports a case illustrating this rare occurrence. The diagnosis of movable spleen with twisted pedicle is seldom made, because the condition is so rare. The autopsy or a laparotomy has in most instances revealed it. The cases that present the greatest difficulty in diagnosis are those that simulate intestinal obstruction.

In but one of the twenty-eight cases collected and reported by Urso was the diagnosis made. In the others a movable spleen was diagnosticated, or the diagnosis was entirely erroneous.

In this case the patient was forty-eight years of age and a servant. Her previous history presented little of interest. Upon exertion she suffered lumbar and abdominal pains. These, however, would disappear after she had rested. She gave no history of malaria or syphilis.

While scrubbing the floor she was suddenly seized with intense pain in the left hypochondriac region. The pain was accompanied by vomiting and marked symptoms of shock, pallid skin,

and cold perspiration, etc. The whole abdomen soon became tense and painful, while the vomiting of bile continued. Nothing could be retained upon the stomach. Notwithstanding the purgatives and enemata that were given, a movement of the bowels was not obtained until the third day, and from this time the general condition began to improve. On the fifth day from the beginning of the attack the patient still complained of violent pain in the left side of the abdomen. She vomited occasionally. The bowels moved regularly. The patient was emaciated and anæmic. The abdomen was meteric, tense, and extremely sensitive to touch, especially in the left hypochondriac region, where a mass could be felt about the size of a fœtal head and flat, with its superior extremity beneath the costal cartilage, and its inferior extremity reached three fingers' breadth below the level of the umbilicus. From its external margin to the vertebral column the percussion note was tympanitic. The mass was immobile. The spleen was not felt in its normal place, nor could it be made out by percussion. The liver appeared to be normal. The patient suffered a little when urinating, but voided daily 1500 cc. of normal urine.

Vaginal examination showed no connection between the pelvic organs and the abdominal tumor.

No change in the composition of the blood nor in the lymphatic glands could be discovered.

The patient was treated with ice bags to the abdomen, opium by mouth and enemata.

The pain gradually subsided, and the tumor could be outlined with more accuracy. The temperature came down from 38.4° to 37.4°. Beneath the soft relaxed abdominal wall the tumor was found to have a convex form like a cake, larger below than above, with a thick round interior margin which was four centimetres distance from the median line, and an external margin nearly on the anterior axillary line. Toward the centre of the concave surface a depression was felt large enough to place a finger. The tumor could be moved slightly laterally, but not vertically.

The patient continued to improve so much that with the aid of an abdominal binder she was enabled to resume her work.

It was evident that the patient was suffering from strangulation of some abdominal organ. The hard, non-fluctuating tumor giving dulness upon percussion and the absence of fœcal vomiting excluded intestinal occlusion. The pelvic examination and location of the mass excluded the presence of an ovarian cyst.

By exclusion the diagnosis of a floating spleen that had rotated upon itself was made.

No cause for the enlargement of the spleen could be found. When it became possible to examine the abdomen accurately, it was found that all of the organs were displaced downward. The cake-like form of the tumor and the notches upon its border made the diagnosis positive. That it had turned upon its own pedicle in nearly half a circle was shown by the antero-internal margin having turned to the left, and its convex surface, which normally turns outside and anterior, was forward.

Urso, from the clinical histories of his cases and from the results obtained by experiments upon animals, attributes great importance to the marked symptoms of anæmia arising suddenly and accompanied by an increase in the volume of the tumor. In the case reported there was rapid onset of symptoms and a sudden increase in the size of the spleen, but there was no marked anæmia.

The author comes to the following conclusions :

That the diagnosis of torsion of the pedicle of the spleen can be made exactly whenever it is possible to establish the existence of a floating spleen ;

That the splenic infarction is not necessary in order to produce symptoms of intense shock ;

That the sudden occurrence of marked anæmia is the most important symptom of infarction in rotation of the spleen ;

That surgical intervention is not always necessary in cases of this kind. (G. H. Mallett, New York.)

OBSTETRICS.

Australia.

A Long Pregnancy.

E. F. Ross, of Sidney (*Australian Med. Gazette*, July 20, 1896), reports the case of a III.-para whose previous pregnancies were uneventful, in whom fœtal movements were first felt September 30, 1895, and recognized by the writer October 6, and noted weekly by him until her delivery, May 20, 1896. As fœtal movements cannot be recognized by the examiner before the third month of pregnancy, at least eighty-four days must be added, which make

the period of her gestation three hundred and eleven days. Menstruation persisted for three months after the appearance of fœtal movements. The delivery was accomplished by artificial dilatation of the cervix and high forceps under chloroform. The fœtal membranes were very thick, and there was very little liquor amnii. The placenta was adherent. The child, a female, weighed about ten pounds. The posterior fontanelle was closed, the anterior fontanelle was small.

Great Britain.

Ovarian Pregnancy: Operation; Sac containing Fœtus and Placenta Removed Intact; Recovery; Experiment with Roentgen Rays.

James Oliver, of Edinburgh (*Lancet*, July 25, 1896), reports the case of a woman aged thirty-nine years, married for twelve years, had one child eleven years before. From December, 1894, to August, 1895, she failed to menstruate, except that on March 10, 1895, when a substance like a deciduous membrane was expelled with a little blood. August 25, 1895, a copious hæmorrhage occurred, which lasted twelve hours. Two weeks later another slight bleeding occurred. From this to December 25 no menstruation returned; but from this date on to May 14 she menstruated regularly. At this time her abdomen was prominent, a hard tumor was felt rising eight and a half inches above the pelvis and measuring the same in diameter at the umbilicus. No fœtal heart sound was heard. The uterus was felt distinct from the tumor and behind it. An attempt was made to obtain a skiagraph by the Roentgen rays, but thirty minutes' exposure of the plate to the X rays was unsuccessful. Abdominal section was done May 14. A tumor possessing a pedicle was found originating in the right half of the pelvis. The pedicle was ligated, and the sac containing a mature fœtus with cord and placenta removed intact. There was no fluid in the sac. No breach in the right Fallopian tube could be discovered either before or after the removal of the sac. An excellent skiagraph of the fœtus was obtained after its removal from the sac. The woman recovered and left the hospital on the twenty-fifth day after the operation. (The writer fails to state whether the fœtus was alive or not.)

The Causation and Treatment of Secondary Puerperal Hæmorrhage.

A. Routh (*Discussion before the Section of Obstetrics, of the British Medical Association, at Carlisle, July* 28, 1896, *Brit. Med. Jour., October*

24, 1896) thought secondary *post-partum* hæmorrhage might be defined as that which occurred from the time the accoucheur left the case, and considered the patient in a normal state to the end of the puerperium. He referred to two varieties, the concealed and the external hæmorrhage. The causes are numerous : uterine inertia suddenly induced by emotion or fright ; partial detachment of a piece of retained placenta ; detachment of thrombi. Ergot given before the birth of the child may lead to irregular contractions of the uterus, and concealed hæmorrhage. The treatment varies with the cause. In the concealed variety the hand should be introduced into the uterus above the constriction, the clots removed, and ergot given hypodermically. Hot intra uterine irrigations may be given while the hand is in the uterus. For external hæmorrhages the uterus should be explored for placental fragments, curetted and tamponed with aseptic gauze.

John Wallace thought the chief cause of secondary hæmorrhage was the retention of something in the uterus, or the separation of clots.

G. A. van Someren referred to a case where compression of the abdominal aorta alone controlled the hæmorrhage.

James Ritchie referred to intra-uterine fibroids as a cause of secondary hæmorrhages. He divided treatment into prophylactic and curative. For the former : 1. For hæmorrhagic tendency he advised large doses of nux vomica for weeks before delivery. 2. Never to allow the patient to become exhausted. 3. The placenta should not be hurried (unless there be hæmorrhage) ; the placenta and the membranes should be carefully examined to see if they are complete. For the treatment of hæmorrhage at the time he argeed with Routh.

J. W. Byers had known a distended bladder to give rise to bleeding some days after delivery.

Ethel M. Williams did not believe that secondary hæmorrhage was possible (except in hæmophilia) where the uterus was empty, thoroughly contracted and retracted, and the pulse good and strong.

Archibald Donald out of 3000 cases yearly had seen no serious case except from retained placenta. He called attention to a class of cases which were normal in all respects up to the eighth or ninth day, when they would be seized with chill, fever, rapid pulse and uterine hæmorrhage ; symptoms like puerperal fever, but are often due only to the toxic and mechanical effect of accu-

mulated fæcal matter. A thorough purge restores the patient's health.

John D. Williams considered secondary hæmorrhage rare after the fourth day. He had met but two such cases, near the end of the puerperum ; the cases were transfused with saline solutions with marked benefit. As the bleeding returned in a few days, the uterus was explored ; in one case a small piece of partially detached placenta was found, in the other a small detached fibroid, loose in the uterine cavity.

Monro Kerr referred to retro-displacements of the uterus as a cause to which too little attention was paid. He also thought too early resort to Credé's method of expelling the placenta a cause of retention of portions of membranes, and thus of hæmorrhage. Until the placenta had separated naturally, no other method by separating it should be used, unless urgent symptoms demanded it.

Murdoch Cameron agreed with the views expressed by the preceding speakers. He depended on uterine massage and tamponing in hæmorrhage after the removal of all clots or fragments.

Dr. Routh closed the discussion by endorsing the views of Drs. Wallace and Byers as to fibroids and a distended bladder being causes of hæmorrhages. He did not think it right to use a curette until the uterine cavity had been explored first by the finger, the finger being the best curette in his judgment.

(T. W. Cleaveland, New York.)

PÆDIATRICS.

United States.

Cerebro-Spinal Meningitis, Followed by Hydrocephalus ; Autopsy.

W. P. Northrup (*Archives of Pædiatrics*, December, 1896) describes the case of a three-year-old boy, ill one month, who gave the following history : One month previous he had had fever, vomiting, and six epileptiform attacks. For a few days after his neck and back were stiff, and he cried on being moved ; then he seemed to improve, but at the beginning of the third week the stiffness and pain returned ; he had spasmodic movements of the arms and legs, ground his teeth, rolled his head, was stupid, seemed to have photophobia, and cried out but did not speak. On admission, he was found to be poorly nourished, anæmic and

slightly rachitic ; there was no fever. He was very irritable ; the neck was rigid, the eyes staring, with moderate photophobia ; the knees and thighs were flexed, and attempted motion caused pain and resistance ; there was sensitiveness to pressure along the vertebral spines. There was free general desquamation, and on the abdomen and thighs a mottled, macular eruption. The abdomen was retracted. The T. P. R. was 98° F.—120—19. For a week the boy's condition remained much the same. An abscess gradually developed, which was opened ; he improved steadily, but eight weeks after admission he had a peculiar attack lasting five minutes, in which the pulse became weak and intermittent, the pupils pinhole, and the eyes did not move when the lids were lifted. After this convalescence was uninterrupted, and he was discharged cured at the end of the fourth month of his illness. The diagnosis was epidemic cerebro-spinal meningitis.

One month later the boy returned to the hospital ; though he had not been so bright mentally as formerly, his general condition had been good up to three days previous, during which time he had had projectile vomiting, and had frequently cried out and put his hand to his head. On readmission, his physical condition was good, but the head was apparently larger and was held rigidly ; the eyes were staring and restless, and there was mental dulness. He lived one month, lying in stupor, screaming or vomiting occasionally ; flexion of the head or movement of any of the muscles seemed to give pain. Death occurred suddenly.

On autopsy no tuberculosis could be found anywhere in the body ; the convolutions of the brain were flattened ; the ventricles were distended to four or five times their normal size, and contained clear serum ; the ependyma was granular.

Without the history the second attack would have appeared clinically to be tuberculous meningitis with dilated ventricles ; the autopsy showed that the symptoms of that disease had been simulated by a non-tuberculous ependymitis. The diagnosis of the first illness would seem to have been correct, though the autopsy showed no traces of its existence. We conclude, then, that the case was hydrocephalous, following epidemic cerebro spinal meningitis.

A Case of Opium Poisoning in a Child Three Months Old.

W. Kaplan (*Pædiatrics*, November 15, 1896) reports the case of a child, three months old, which was apparently dying from the

effects of a dose of patent cough medicine, given by the mother about a half hour previously. The child was in collapse, its skin cold and sweating, its pulse feeble and slow, its respirations shallow, about ten to the minute, and its pupils contracted to the size of a pin's head. A diagnosis of acute opium poisoning was made and an emetic given, followed by stimulation with coffee, ammonia and artificial heat. The child recovered.

A child of four years to whom the same dose was given showed no symptoms. This case should warn us against giving opium in even small doses to infants, and should warn mothers against patent medicines, which so often contain opium.

Intubation for Diphtheria.

J. M. Ray (*Pædiatrics*, December 1, 1896) reports the following case of diphtheria in a child six years old. The child was partially asphyxiated, and intubation was attempted ; on pushing the tube into the larynx the child became much asphyxiated, ceased to breathe for a minute or two, and then coughed, forcing out the tube, which was followed by a complete membranous cast of the larynx ; there was a rent in the membrane at the point where the tube had penetrated it. The child then breathed freely, but in about twenty-four hours again presented signs of obstruction ; the tube was introduced, but in about a half hour was again coughed up together with a second cast much like the first, but less thick. Then the tube was reintroduced and retained for three days. The case made a good recovery. Bacteriological examination showed the Klebs-Loeffler bacilli, and the child has since shown evidence of paralysis of the soft palate. The case shows how rapidly the membrane may form.

In the discussion, two other cases were mentioned, in which sufficient membrane to cause a fatal issue reformed within twenty-four hours after the expulsion of the first membrane.

(A. D. Chaffee, New York.)

NEW INSTRUMENT.

A New Leg Supporter.

The author, Victor E. Neesen, M.D., house surgeon at the Woman's Hospital, thus describes his device :

"In designing a new leg supporter I lay upon myself the incumbency of explaining why the leg holders which are now in use are not good enough.

"To my mind, there are two objections to most leg holders—viz., (1) they are not firm enough, and (2) they are in the way. I strove to eliminate these objectionable features when thinking out the instrument to be described.

"The apparatus, or rather each half of it, consists of a steel rod, nickel-plated, about three feet long, a transverse rod eight inches long coming off at right angles to the top. At the angle is fastened a double strap adjustable by means of a screw, and at the end of the cross rod are two buckles, also adjustable. To attach it to a table a vise is used such as depicted. On the Neesen table there is a sliding track into which the vise fits, and a screw fastens it. Thus the vise moves backward or forward and the rod upward and downward, so that perfect adjustment is secured.

"The cross rod is intended to go under the patient's knees. One strap goes over the anterior aspect of the leg and the other just above the knee. Thus the leg is held firmly in whatever position it is placed.

"One objection has been raised, viz., that after prolonged operations temporary paralysis may result from pressure of the rod in the flexure of the knee. To refute this I might say that after an extensive trial in the Woman's Hospital, not one case has had any symptoms referable to pressure from the rod under the knee.

"I might add that in most cases the forward strap, the one going over the leg, may be dispensed with, the thigh strap holding the knee on the rod quite firmly."

NOTE.—Through an oversight the cut of Dr. Neesen's instrument was omitted in the January issue.—EDITOR.

THE

AMERICAN GYNÆCOLOGICAL

AND

OBSTETRICAL JOURNAL.

MARCH, 1897.

THE TOXIC EFFECTS OF IODOFORM-DRESSINGS.*

By Malcolm McLean, M.D., New York.

Our great familiarity with iodoform in all its uses would seem to make it a work of supererogation for one to attempt to offer any new suggestions concerning it.

Yet it may be said of nearly every valuable agent, that it possessed certain properties which may have remained unrecognized for years after the substance itself was in common use and of common knowledge.

And although numerous scientific papers have been devoted to the chemical compound under consideration at this time, particularly as to its germicidal or antiseptic powers, comparatively little has been said concerning one phase of its potency, namely, its power to produce toxic symptoms in the animal economy.

While allusions are often made to certain poisonous effects produced by iodoform, clear and definite descriptions of those effects are generally wanting, and one is left to make a sort of clinical guess at what specific symptoms might be expected. At a meeting of the German Gynæcological Association, held at Munich, June 18, 1886, Dr. Elischer, of Buda-Pesth, related the history of a laparotomy in which he had employed iodoform freely within the peritonæum. For several days after the operation the patient had suffered from curious cerebral and other nervous disturbances, which he attributed to the toxic influence of the iodoform. In the course of the discussion several of the surgeons present preferred to account for the symptoms described by other pathological factors. Dr. Slaviansky, of St. Petersburgh, said, in the course

* Read before the New York Obstetrical Society, December 15, 1896.

of his remarks, "Thus far we do not know the clinical picture of iodoform poisoning." And now, in 1896, ten years later, ten years of most extensive acquaintance with the drug by surgeons throughout the world, it might be said with almost equal force—in this country at least—that "we do not know the clinical picture of iodoform poisoning."

It may be that to many skilled and widely experienced operators the symptoms of this peculiar poison are so familiar that they deem it superfluous to mention them at all in detail, believing that they are so well recognized by all; but be that as it may, the fact remains that it is difficult to find definite information on the subject in the usual places where one would naturally expect to find it.

One eminent writer on gynæcology says, in regard to surgical dressings: "If symptoms of absorption render necessary the substitution of some other substance for iodoform," etc., but he does not even hint at what may be the "symptoms of absorption." Another recent work on clinical gynæcology says: "Some patients are extremely susceptible to the toxic effects of iodoform even when very small quantities are employed," etc., but it is assumed that every one is or should be familiar with the toxic effects, or the symptoms of them, for no further description is considered necessary. Other works upon gynæcology make no allusion whatever to any poisonous effects of iodoform dressings. And in looking over the more convenient journals devoted to this branch of medicine—extending over a period of about ten years—no detailed account could be found bearing upon the subject.

In the apparent absence, then—from our more convenient sources of information—of sufficiently clear record of the symptoms of iodoform poisoning, permit me to offer for your consideration a brief description of those clinical evidences of toxæmia due to this drug.

It is hoped that a short note of the chemical itself may not be considered inappropriate. Iodoform has been known for fifty years or more, but has been brought into general surgical use chiefly during the past ten or fifteen years. It is found as a compound formed by the action of iodine upon alcohol in the presence of potassium carbonate, and contains over 96½ per cent. of its weight in iodine. It occurs in small yellow hexagonal crystals, which have a peculiarly penetrating and persistent odor, with a sweetish metallic iodine taste. It is volatile at ordinary temperatures. In boil-

ing water it distils over with the aqueous vapor. It is very slightly soluble in water, imparting only some taste and odor. It is soluble in 52 parts of 95 per cent. alcohol, and in a little over five parts of sulphuric ether. It is also very soluble in chloroform, benzin, and in volatile and fixed oils. It is incompatible with many chemicals, particularly the mercuric chloride. It is well to note this fact, in connection with our preparation of iodoform gauze, by soaking it in the mercuric chloride solutions.

Iodoform has analgesic properties as well as antiseptic power. Its antiseptic power has been discredited by some on account of the fact that it fails to arrest the culture and growth of certain pathogenic germs in laboratory experiments. But surgical experience has taught us that, beyond doubt, this compound of iodine has the power to destroy the septic influences of the germs as they develop in the living animal tissues and to discourage the suppurative processes in wounds. This practical fact which seems so at variance with scientific research is probably easily explained. A decomposition of the iodoform takes place in contact with the tissues, setting free nascent iodine in such a form that it is capable of rendering harmless the germs by destroying their toxines as they are developed. These transformations of the chemical in the secretions of the tissues themselves are of the utmost importance in securing the protecting influence of this valuable antiseptic.

A marked characteristic of iodoform is the readiness with which it is absorbed into the system and the comparatively *slow elimination from* the system. This is an important point in dealing with its suspected toxic influences, namely, that the elimination of the drug goes on *much more slowly* than its absorption.

With these preliminary comments upon the antiseptic under consideration, let us come directly to the subject-matter of our paper, "The Toxic Effects of Iodoform Dressings."

A clinical case occurring in my own practice may be useful in giving the desired picture of a typical poisoning.

Mrs. T., with a good general physique, but with a rather marked susceptibility to the influence of drugs, was operated on for a large adherent tumor of the ovary imbedded in the pelvis posterior to the uterus. The separation of the pelvic attachments was difficult, and necessitated the exposure of many raw surfaces. Although there was no troublesome oozing of blood, I decided to drain by means of Mickulicz's method. In this I was seconded by Dr. T. G. Thomas, who was kind enough to be present. The

patient went from the operating table in very good condition. The cerebral and gastric disturbances of the ether, however, kept up with apparently little abatement, and the patient's mind continued bewildered for *several days*.

The pulse and temperature began to rise in the first six hours, and some delirium continued, with occasional exacerbations. At the end of twenty-four hours the patient lay in a peculiar state of mind—a mixture of mild delirium with melancholic lethargy. The skin was dry, with numerous erythematous patches covering the whole body, including face and limbs. The pupils were contracted and fixed, the pulse was 135, the temperature 102°. No pain, no tympanites. The quality of the pulse was small and almost wiry. Headache was marked, and mild hallucinations were present during the first three days. At one time there was some unconscious evacuation from the rectum. The stomach continued irritable and nourishment was not retained. The dull, altered expression of the face, the contracted and motionless pupils, the skin eruption, which itched excessively, together with the headache and unusual cerebral disturbances, convinced us that the pulse and temperature were not indicative of inflammatory or organic septic processes, but were due to some specific influence of a foreign substance in the circulation.

On the fourth day the gauze pack was removed. For nearly twenty-four hours the symptoms continued with signs of increasing trouble. The temperature and pulse kept up and the mind was sadly bewildered and silly. But after this the symptoms all declined and rapidly the patient became normal again, giving a clear and uninterrupted progress to recovery.

The transformation in the condition and appearance of the patient was so marked as to impress one with the fullest conviction that she had come distinctly out of an intoxicated state, the intoxication being that of iodoform. In this case the gauze was supposed to be of ten per cent. saturation, but in reality it appeared to be much more heavily laden with the crystal iodoform in its meshes.

The toxic effects of iodoform may be conveniently classed in three groups :

1. Cutaneous irritation : Eruptions of the skin in erythematous or eczematous form associated with the pruritus of urticaria.

2. Cerebral disturbances : Headache often very marked ; delirium more or less active ; melancholia, hallucinations ; the

pupils occasionally dilated, but more often contracted and motionless; the pulse decidedly accelerated, running early up to 135 to 150 per minute; quality rather small and wiry; rapid increase of temperature.

3. Syncopal or asthenic form of poisoning: Patient overcome with *dizziness*, *mental confusion*, great lethargy; weak, rapid pulse; some *paralysis of the sphincters*, death coming sometimes suddenly by heart failure.

Inasmuch as we have shown that a peculiarity of the drug is its rapid absorption and its *slow* elimination, it is well for us to draw careful conclusions as to the significance of certain symptoms occurring in our operative cases where iodoform plays a prominent part.

By so doing we may spare our patients much unnecessary suffering and not a little danger, and ourselves a secret agony which few conscientious men have been able to escape.

CLINICAL REPORT OF ONE YEAR'S OBSTETRICAL WORK AT THE PRESTON RETREAT.*

By Richard C. Norris, A.M., M.D.,

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The clinical memoranda presented in this report of the obstetrical work at the Preston Retreat during the year 1896 contains tabulated statements of all the cases delivered during that period. There have been two hundred and forty-five deliveries. There has not been a maternal death. Since I assumed charge of the Preston Retreat there have been seven hundred and forty-five deliveries with one maternal death, due to chronic bright's disease, and fully reported in the *American Gynæcological and Obstetrical Journal*, February, 1896.

The patients while awaiting delivery have presented few serious complications. The urine is systematically examined each week. A moderate amount of albumen was found in 9 cases, in which there were no evidence of toxæmia and only a slight diminution in the amounts of solids and urea excreted. Careful supervision of the patients to promptly recognize a sudden failure of excretory compensation enabled them to go to term and be delivered

* Read before the Philadelphia Obstetrical Society, January 7, 1897.

without accident. The histories of two cases of grave kidney insufficiency and of one case of eclampsia are as follows:

Kidney Insufficiency.

Case I.—Mrs. C. (Case No. 4102), aged twenty-four years, II.-gravida. Admitted to hospital January 23 with blurred vision, especially of the left eye, headache, nausea and vomiting, witching of the facial muscles, and œdema of the legs and vulva. The urine was free from albumen and casts; specific gravity 1017; the quantity in twenty-four hours 18 ounces; the quantity of urea less than 1 per cent. The patient was given a hot bath immediately after admission and was put to bed. A milk diet, hot-air baths three times a day, free purgation with elaterium, followed by Rochelle salts in sufficient doses to obtain six or seven stools daily, comprised the treatment for five days, when the threatening symptoms had disappeared. Natural delivery occurred three weeks after admission and the puerperal convalescence was normal.

Case II.—Mrs. J. (Case No. 4097), aged thirty-four years, VIII.-gravida. Three days after admission the urinalysis found a trace of albumen; specific gravity 1024; quantity in twenty-four hours 33 ounces. There were no evidences of toxæmia. Ten days later the quantity of albumen had increased and the quantity of urea had diminished to .7 per cent. A few granular casts were found, and headache and loss of vision in the right eye now occurred suddenly. A hot bath, Epsom salts to obtain eight to ten stools daily, a milk diet, hot-air baths, and three-grain doses of caffeine citrate every fourth hour during the day, were given throughout three days with marked improvement. The patient was within a few days of term, and her improved condition warranted waiting for spontaneous delivery, which occurred without complication until the delivery of the placenta, when an alarming post-partum hæmorrhage occurred from atony of the uterus, that required the introduction of the hand into the uterus to remove clots and to administer a hot intra-uterine douche of sterilized water. The patient was much prostrated by the loss of blood, but reacted, however, with a quick and feeble pulse. During the second twenty four hours after delivery 28 ounces of urine were voided which contained albumen and casts; specific gravity 1014; urea .9 per cent. Headache soon returned, the pulse quickened to 150, there was twitching of the facial muscles, and with a sudden rise in temperature, on the third day to 105⅕° F., vision in both eyes was impaired, and accompanied by intense headache and

general muscular twitching. A convulsion seemed imminent, and vigorous depletive treatment was indicated; yet the patient's prostration, her weak heart, profound anæmia and rapidly failing strength forbade the depressing treatment with chloral, veratrum, diaphoresis, and profuse catharsis, so useful in a more vigorous patient threatened with eclampsia. In the presence of such a case as this, one's very best judgment is demanded—on the one hand, not to overtreat the patient, and thus scatter her feeble forces rallying to her rescue, and on the other hand to use fearlessly some of the measures ordinarily employed, and to counteract their ill effects by relying on means usually contra-indicated by a threatened convulsion. The condition of the heart not only contra-indicated venesection or veratrum, but even required stimulation. Brandy and the infusion of digitalis, of each a tablespoonful, and one sixtieth of a grain of strychnia were given every fourth hour until the heart's action showed their effect in slowing and steadying the pulse, when caffeine was substituted. A forced enema of glycerine and Epsom salts was effective, and calomel gr. $\frac{1}{4}$ every three hours was given throughout three days. Eight ounces of nomal salt solution injected into the rectum every fourth hour, hot-air baths with an ice cap to the head, a milk diet, an abundance of water, plain and carbonated, brought the patient safely through four critical days, when Basham's mixture, minute doses of bichloride of mercury, a milk diet, and a daily vegetable cathartic were substituted and continued throughout her convalescence.

Case III.—*Eclampsia.*—Mrs. R. (Case No. 4269), aged twenty-three years, I.-gravida. Admitted in labor. Twins diagnosticated by abdominal palpation. Vertex presentation followed by breech presentation. Labor was uncomplicated, both children living. Delivered at 5.15 and 5.25 P.M. There was no œdema, but she complained of slight headache, which ceased after labor. At 8 P.M. a violent convulsion occurred without warning. Sixteen ounces of urine were drawn by the catheter; specific gravity 1006; moderate amount of albumen; hyaline casts abundant; pulse 110; temperature 101° F.

The notes of the treatment are as follows:

Chloroform inhalation; patient comatose after convulsion; chloral 3 i. by enema; croton oil gtt. iii. followed in half hour by elaterium gr. $\frac{1}{8}$; veratrum viride, fluid extract gtt. viii. hypodermatically; enema containing Epsom salts, glycerine, and water. At 9 P.M.: Pulse 80; patient conscious; bowels have moved five times. At 10 P.M.: convulsion; pulse 124, with very high ten-

sion ; veratrum gtt. v. ; chloroform inhalation, soon followed by chloral gr. xx. by the mouth ; hot-air bath ; saturated Epsom salt solution f. 3 ii. every fifteen minutes. At 11.30 P.M : patient conscious but restless ; bowels moving very freely ; pulse 96 ; chloral gr. x. ; veratrum gtt. v. The pulse at midnight, 72 ; patient resting quietly. Milk diet, vapor baths for an hour, three times daily, caffeine gr. xii. and Rochelle salts one ounce in divided doses each day were continued for three days. Thereafter Basham's mixture, calomel alternating with vegetable cathartics, a milk diet and occasional hot-air baths were employed. Convalescence was uninterrupted.

Placenta prævia.—The history of the one case of placenta prævia is as follows :

Mrs. V., aged thirty, III.-gravida, German. On February 15th, at 7 A.M., was attacked with flooding, which was not accompanied by pain. Examination disclosed *placenta prævia centralis*, the smaller segment of the placenta extending about an inch beyond the left margin of the internal os. The loss of blood was about one pint when the bleeding ceased. Pregnancy had advanced to term. There had been irregular hæmorrhages since the fourth month of pregnancy, but never in large quantities. The patient was put to bed and closely watched, and within a few hours uterine contractions had begun and were accompanied by slight bleeding. The patient was etherized, the smaller segment of the placenta was separated, and a living child was delivered by podalic version. Immediately after the delivery of the placenta profuse and persistent bleeding occurred, which a hot douche failed to control and which required a firm utero-vaginal tampon of iodoform gauze. Twenty-four hours later the tampons were removed and a creolin douche was given. The patient's convalescence was afebrile, and mother and child were discharged in good condition.

LABOR.

Presentation and Position.	L. O. A.	R. O. P.	R. O. A.	L. O. P.	Breech.	Transverse.	Total.	Infants.	
Primigravidæ	68	9	3	..	2	2	84	Male,	133
Multiparæ	119	28	7	1	7	2	164	Female,	115
Total	187	37	10	1	9	4	248	Total,	248

Three Twin Pregnancies (*Primigravidæ*).—The presentations were shoulder-breech, vertex-vertex, vertex-breech.

Complications of Labor.

Flat Pelvis.—Eight cases of minor degrees of pelvic contraction have been noted, in only two of which the conjugate diameter was below 9 cm.

The six cases with conjugates above 9 cm. were successfully delivered either spontaneously or with forceps.

The histories of the two cases with conjugates below 9 cm. are as follows :

Case I.—Mrs. G. (Case No. 4112), American, I.-gravida, height 4 feet 6¾ inches. Admitted February 9th. Confinement expected February 24th.

Pelvic Measurements.

Inter-spinous	25	cm.
Inter-cristal	26	"
External conjugate	17½	"
Diagonal conjugate	10	"
True conjugate	8.5	"
Right diagonal	19	"
Left "	19	"
Inter-trochanteric	26	"
Circumference	78	"

The relative size of the head to the pelvis was determined by careful suprapubic and vaginal palpation, and it was decided to induce labor at once and to deliver by version. First bougie 11 A.M., February 11th. Second bougie the following day ; February 13th pains recurring at infrequent intervals ; February 14th os dilated sufficiently to proceed with version. The after-coming head entered the pelvic inlet extended and the chin caught above the symphysis pubis. This accident and the pelvic contraction prevented speedy delivery. The child perished, and craniotomy on the after-coming head was performed by my assistant, Dr. H. W. Hassell, who had charge of this and other cases that were delivered during my absence from Philadelphia for two weeks.

Case II.—Mrs. D. (Case No. 4119), American, primigravida, height 4 feet 8 inches. Admitted February 23d. Confinement expected February 14th.

Pelvic Measurements.

Inter-spinous	24 cm.
Inter-cristal	25 "
External conjugate	18½ "
Diagonal conjugate	10½ "
True conjugate	8¾ "
Right diagonal	18 "
Left "	18 "
Inter-trochanteric	26 "
Circumference	81 "

The cervical canal was very narrow, not admitting a No. 7 bougie without preliminary dilatation. When the tip of the bougie reached the internal os the instrument was grasped so firmly by the constricting cervix that the tip was deflected from the amniotic sac with great difficulty, and punctured the sac. The liquor amnii drained away slowly during the next few hours. Thirty-six hours after the introduction of the bougie labor pains were frequent, and upon vaginal examination the umbilical cord was found prolapsed and pulseless. The head had partially entered the pelvic inlet. Spontaneous birth of an infant with a large spina-bifida soon followed. The length of the umbilical cord was 85 cm., and the biparietal diameter of the child's head measured 9 cm.

This case illustrates a possible danger from puncturing the amniotic sac when introducing a bougie for the induction of labor, a danger, however, that must be rarely encountered. I have induced labor many times, and on three occasions have punctured the amnion above the internal os with no such accident to the cord. When the cervix is very rigid especial care should be taken to gently deflect the tip of the bougie toward the uterine wall, and that can be accomplished by passing a curved stylet partially through the bougie and by slightly withdrawing the stylet at the moment the tip of the bougie passes the internal os.

This case also illustrates the chagrin one experiences when an obstetric operation is undertaken for pelvic deformity, and a child is born with a defect which of itself will destroy the infant.

A complicated labor due to *ventro-fixation* again impressed me with the serious obstruction that sometimes follows that operation, and emphasized the necessity for prompt interference in the management of labor thus obstructed.

This case is fully reported in the *American Journal of Obstetrics*, January, 1897, and that report contains my expressed conviction

that such cases should be carefully observed during pregnancy, and be promptly subjected to the treatment there advised.

Labor has been complicated by *prolapse of the umbilical cord* in three cases, in all of which the cord was pulseless at the time of examination. In one case the patient entered the hospital in labor with the cord prolapsed and pulseless, and in another case there were no pulsations in the prolapsed cord when the patient notified the nurse that labor had begun.

TABLE A.

OBSTETRIC OPERATIONS.

	INDICATIONS.	Number of Cases.	Infantile Deaths.
Forceps	After-coming head	1	1
	Flat pelvis	3	0
	Inertia uteri	3	0
	Occipito-posterior presentation	2	1
	Total multiparæ, 4; primiparæ, 5	9	2
Version	Flat pelvis	1	1
	Placenta prævia centralis	1	0
	Shoulder presentation	4	0
	Total	6	1
Induced labors	Pelvic deformity	2	1
	Prolongation of pregnancy	1	Prolapsed cord; spina bifida.
	Total	3	1
Uterine irrigation and curettage	Elevated temperature; subinvolution; prolongation of bloody lochia	2	
Vaginal irrigation	Vaginal ulceration	2	
Sutured perinei	Vaginal and perineal lacerations; multiparæ, 3; primiparæ, 14	17	
Incision of mammary abscess	Abscess following mastitis (infant)	1	

Four puerperal patients required the use of the catheter.

The Puerperium.

Fever in the puerperium.—The temperature charts of the patients delivered during the year exhibit the following percentages of fever: In nine and eight tenths per cent. the temperature did not rise about 99° F.; in eighty-one and eight tenths per cent. the maximum rise was 100° F.; in eight and nine tenths per cent. the temperature was above 100° F. not longer than twenty-four hours; and in nine and three tenths per cent. the temperature remained above 100° F. for varying periods longer than twenty-four hours.

Temperature above 100° *F. Longer than Twenty-four Hours.*

Cause of Fever.	No. of Cases.
Caked breasts, including all cases of mastitis, in all of which resolution occurred	13
Eclampsia	1
" (threatened)	1
Influenza	1
Insanity	1
Malaria	1
Sapremia (absorption from the uterus)	2
" (" " " vagina)	2

The technique employed at the Preston Retreat to surround the patient with the protection afforded by rigid cleanliness and antisepsis is set forth in my report of last year, and has not been changed. The recent discussions as to the disadvantages of a routine ante-partum and post-partum douche, based as they were upon bacteriological and clinical observations by most able and reliable investigators, almost induced me to discontinue the sublimated douche given to every case before and immediately after labor. Recalling, however, the fact that the results of the bacteriologists' investigations of the vaginal secretions in pregnant women are by no means uniform, and reviewing the records of my own institution since the introduction of the ante- and post-partum douche by the late Dr. William Goodell, and finding therein that more than 2500 consecutive cases without a death from sepsis had received these douches, I was compelled to check for a while my admiration for laboratory results, and to be guided by conservatism—a task not always easy for a young man.

In hospital work, when skilled bacteriological examinations are not to be attained, and when the cleanliness of nurses and of instruments receives constant care and personal investigation, I believe the routine ante-partum douche is safe and efficient. In private practice the same measure will often be harmful because some physicians, many nurses, and very many douche appliances are not clean, and the safe course for the general practitioner is to omit the douche except in the presence of a profuse and abnormal vaginal discharge, when the disinfection should be attended to by the physician, and he must be sure of his knowledge of the details of antisepsis. I am not convinced, however, that the routine post-partum douche is necessary after a normal labor. That it can do no harm is indicated by the results at the Preston Retreat. It is

quite possible that equally good results would be attained by omitting the douche after labor, a plan I propose to follow throughout the coming year.

A large dispensary practice during the last nine years has demonstrated to me, beyond all possible doubt, that the vagina of the average hospital patient, pregnant or not pregnant, certainly is improved by a clean and cleansing douche. Although the vaginal secretion is said to possess bactericidal power and usually to be free from pathogenic micro-organisms, *sometimes* the latter are present and can be detected with certainty only by a bacteriologist. Douching all cases, doubtless we douche many cases unnecessarily, but we have the satisfaction of believing that we do not miss the infected cases, and that our douche does some good. Granted that frequent douching with strong antiseptic solutions impairs cell resistance against micro-organisms, the mechanical removal of bacteria and their products by a single, copious, clean and mild antiseptic douche can do no harm if all subsequent examinations are conducted with strict personal cleanliness. If examinations do not add infection to thrive upon the tissues whose resistance is thought to be diminished by the douche, then the patient is none the worse for the douche.

If there are pathogenic microbes in the vagina, the mechanical effect of the douche has a value equal to or it may be greater than the antiseptic effect. At all events, the results closest to my hand, and the lack of uniformity of the laboratory investigations, induce me to let well enough alone, and to continue the employment of the ante-partum douche.

Septic Fever.—There have been four cases of fever in the puerperium that were due to septic absorption. In two of these cases prompt disinfection of the uterine cavity brought the temperature to the normal. The fever in two cases was due to septic wounds of the vagina, and I cannot refer to these cases without a desire to impress upon general practitioners the necessity for careful inspection of the vaginal walls, through a speculum, of all cases of beginning fever due to septic absorption in the early puerperium. From my consultation work I find the general practitioner commonly disregards the vagina, although willing and ready to douche or curette the puerperal uterus. Only recently a fatal case of sepsis originating in and spreading from vaginal ulcerations was repeatedly curetted, of course to no purpose, while the source of infection was wholly overlooked until the involvement of broad ligament, tube and ovary, cost the patient her life.

One case of *puerperal* insanity has been observed—the patient a primigravida, an epileptic, and a foreigner who recently arrived in America. She was poorly fed, and her pelvis was moderately contracted. A difficult forceps delivery, followed by free bleeding, further reduced her strength, and her mental equilibrium could not resist that combination of depressing influences. Throughout two weeks her maniacal delirium and extreme weakness were troublesome, but careful treatment brought her through the critical period of her mental breakdown, and five weeks after delivery she returned home almost wholly convalescent.

Diseases of the New-born Infant.

The appended tables show the infant mortality during the year. Of six cases of aspiration broncho-pneumonia, two died. The treatment of this rather common disease of the new-born infant comprised moderate stimulation (three drops of whiskey and one of the tincture of digitalis, with one half to one grain of carbonate of ammonia every fourth hour) ; counter irritation to the chest by means of camphorated oil ; a light cotton jacket ; regular feeding with mother's milk, either permitting the infant to nurse when it would do so, or with a medicine dropper the freshly drawn milk was dropped into the child's mouth. When cyanosis and very rapid respirations indicated especial embarrassment, a warm mustard bath was given for a few minutes, and frequently repeated when necessary. As to the prognosis of this disease, I have observed that the cases that recover usually begin to improve on the fourth or fifth day, and by the end of the seventh day the temperature, pulse, and respirations are normal.

The routine employment of the Credé treatment for the prevention of gonorrhœal ophthalmia has further proved its great value. There has not been a case of gonorrhœal ophthalmia.

In five female infants a bloody discharge from the genitals was observed.

A pulse, temperature, and respiration record of all infants is recorded on a special chart throughout the first week of the infant's life, and throughout a longer period when the child's fever curve is abnormal. It is simply astonishing how frequently serious illness of a new-born infant can be overlooked by the doctor, the mother, and the nurse when such a record is neglected. I have been paying especial attention to the diseases of early infancy that have occurred at the Retreat during the past three years, and propose to prepare at an early date a report of all the cases observed.

TABLE B.

INFANTILE DEATHS BEFORE OR DURING LABOR.

	No. Cases.	Remarks.
Asphyxia pallida	3	1 forceps, R. O. P.; 1 following version; 1 natural delivery, R. O. P.
Craniotomy	1	After-coming head; chin locked above symphysis; infant dead.
Prolapsed cord	3	Cord pulseless in all cases when first discovered.
Premature birth	6	1 at 6th month. 2 " 6½ months. 1 " 7th month (macerated—syphilis). 1 " 7½ months (labor complicated by ventrofixation). 1 " 8th month (macerated—syphilis).
Spina bifida	1	
Still-born—macerated	1	History of maternal syphilis.
Total	15	Still-births, 6.1 per cent.

TABLE C.

INFANTILE DEATHS FOLLOWING LABOR. MORTALITY, 6.9 PER CENT.

	No. Cases.	Remarks.	Duration of Life.
Atelectasis	2	(1) Partial aeration of one lung; (2) one lung completely aerated	1 hour. 4 hours.
Cerebral apoplexy	2	1 case; second twin; delivered by breech extraction	10 days.
		1 case; breech delivery; infant not asphyxiated at birth	4 days.
Cerebral congestion	2	1 case; no other cause of death found at autopsy	6 days.
		1 case; associated with congenital narrowing of aorta and very patulous foramen ovule	5 days.
Cerebellar apoplexy	1	Version	6 days.
Gastro-enteritis	1	Blood and mucus in stools six days before death.	18 days.
Inanition	2	1 case; premature, 6½ months; incubator; gavage	12 hours.
		1 case; simple atrophy; inability to digest and assimilate food	15 days.
Inspiration pneumonia.	2	1 case; forceps delivery	9 days.
		1 case; natural delivery; R. O. P.	6 "
Melena	1	Hæmorrhagic ulcer at hepatic flexure of colon; a few sub-mucous hæmorrhages in intestines and rectum	7 days.
Syphilis	2	Confirmed by autopsy and histories (maternal and paternal)	10 days. 3 weeks.
Syphilis of lung	1	No signs of broncho-pneumonia; liver, spleen, and long bones also gave evidences of syphilis	7 days.
Syphilitic pemphigus	1	No autopsy	15 days.
Total	17	Autopsies by Dr. Burr and Dr. Westcott.	

500 NORTH TWENTIETH STREET.

THE CHANGES IN THE UTERINE MUCOSA DURING PREGNANCY, AND IN THE ATTACHED FŒTAL STRUCTURES.*

(*Continued.*)

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Decidua Vera.

The description of the earliest decidual formation in uterine pregnancy, where the whole uterus and ovum were obtained undisturbed, is that given by Reichert. In this case the ovum was believed to have been only twelve or thirteen days old.

The mucosa of the body was swollen and divided by furrows into a series of flattened or rounded areas of different sizes. This condition did not exist in the cervix, the lower edge of the vera forming a ridge above the os internum which gave it a distinct boundary. The openings of the Fallopian tubes were visible. The areas of the anterior wall were distinct from those of the posterior wall, a furrow, which ran down the side wall, separating them. It was evident that the lateral parts of the mucosa had not increased in thickness in the same degree as that of the anterior and posterior walls. The number of areas on each of these walls was eight.

The whole vera was triangular, the lower end being truncated. The base measured 3 cm., the vertical distance from base to apex 2.7 cm. In the hydroperione was a small amount of milky fluid (probably mucus). Reichert thought that this seemed to keep the walls apart. This is probably the case. It is very likely due to increased activity of the glands in the early stages of congestion of the mucosa.

In comparing this specimen with others of a later period,

* Read before the Royal Society of Edinburgh and awarded the first Research Prize of the Royal College of Physicians of Edinburgh in 1896.—Ed.

Reichert found that the arrangement of the areas was a variable one, but that at each angle of the mucosa there was a pretty constant similarity. Thus, on both walls at each upper angle a somewhat triangular area was found, while at the lower angle a vertical furrow was pretty constant, giving rise to two areas of rectangular shape.

In his earliest specimen three other areas were irregularly polygonal. Another was rounded, and to this the ovum was attached. The surface of the areas was flattened or slightly rounded, and was subdivided by numerous slight furrows which varied in depth. After this specimen had been placed in spirits of wine, Reichert noticed that the small subdivisions of the areas presented the appearance of a mass of small hillocks or papules. (This appearance must, therefore, be regarded as a purely artificial formation caused by the spirit.)

In the fresh abortion sacs, in the third, fourth, and sixth weeks of gestation, which I have studied, the appearance of the inner surface of the vera is much the same as that described by Reichert. After careful graduated hardening there was practically no change, like that produced when sudden hardening in methylated spirits was employed—*i.e.*, no such shrinkage was produced.

The appearance of the early decidua, it is interesting to note, is the same as that found in the uterus in ectopic gestation, as described by Abel, myself, and others.

Reichert also described another uterus which was believed by him to be four or five days pregnant, but in which no ovum was found. The ovum was either not attached, or only slightly attached to the mucosa, and may have been lost when the uterus was first opened. The appearance presented was different to that seen in the twelve-day specimen. There was a swelling of the mucosa both on the anterior and posterior walls, but scarcely any at the junction of these walls, so that a furrow was formed between them. The surface of the raised area was smooth, showing only the openings of the glands somewhat wider apart than in the normal mucosa. It was of a deep red color. There was only a faint trace of the commencing division of these areas into smaller divisions by means of furrows. Close to the *os internum* the lower edge of the raised plateau appeared as a slight ridge.

Reichert unfortunately made no minute microscopic examination of either of these specimens. One point noted, however, by him is of importance—viz., that the covering epithelium had be-

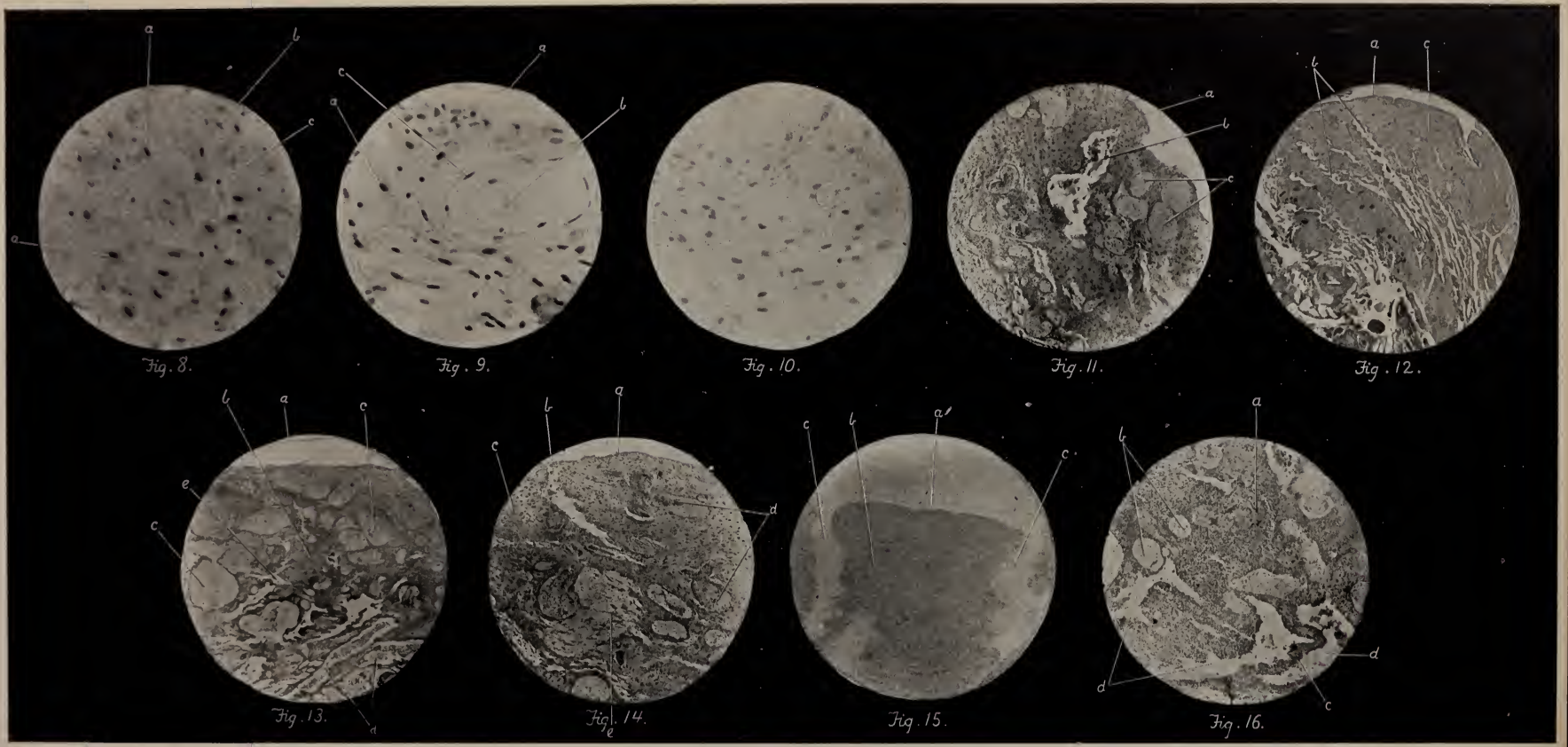


FIG. 8. INTERGLANDULAR TISSUE OF COMPACT LAYER OF DECIDUA VERA FROM AN ABORTION AT 4TH WEEK.

Connective tissue cells of various sizes are seen—different stages in the formation of decidual cells.

a, decidual cells; *b*, connective tissue cell slightly enlarged; *c*, leucocyte. X. 290.

FIG. 10. ANOTHER OF THE SAME, NEAR SPONGY LAYER.

Here there are fewer decidual cells. X. 290.

FIG. 11. DECIDUA VERA. UPPER PART OF COMPACT LAYER. 6-WEEKS PREGNANT UTERUS.

a, surface covered with epithelium, some-

FIG. 12. ANOTHER OF THE SAME.

a, surface with covering epithelium which has become somewhat flattened; *b*, glands, some are much compressed. X. 25.

FIG. 13. ANOTHER OF THE SAME.

a, surface of Vera; *b*, interglandular decidual tissue, *c*, dilated capillary; *d*, gland-space of spongy layer; *e*, partly obliterated gland in

cidual cells; *d*, dilated capillaries; *e*, blood effused among decidual cells X 40.

FIG. 15. ANOTHER OF THE SAME.

a, surface, *b*, decidual cells, *c*, glands not yet obliterated, their epithelium has disappeared. X 40.

FIG. 16. JUNCTION OF COMPACT AND SPONGY LAYERS OF VERA IN 6-WEEKS SPECIMEN.

FIG. 17. UPPER PART OF SPONGY LAYER FROM A 6-WEEKS SPECIMEN.

a, trabecula between spaces, *b*, débris in gland-spaces.

Note oblique direction of spaces (vertical diameter of photograph is at right angles to muscular wall). X. 40.

FIG. 18. ANOTHER FROM SAME.

a, trabecula; *b*, degenerating epithelium in gland-spaces.

Note that gland-spaces are mostly parallel to surface of mucosa. Decidual cells in the upper part are larger than those in the lower. X. 40.

FIG. 19. ANOTHER FROM SAME.

a, trabecula; *b*, gland-space containing degenerating cells. The gland is tortuous and wide. X. 40.

FIG. 20. LOWER PART OF SPONGY LAYER FROM SAME SPECIMEN.

a, trabecula of spongy layer, *b*, decidual island; *c*, junction of spongy layer and muscle: *d*, muscular part of wall. X. 25.

FIG. 21. ANOTHER OF THE SAME.

a, trabecula of spongy layer; *b*, decidual island; *c*, degenerating epithelium in gland-space X. 40.

FIG 22. ANOTHER FROM SAME.

a, trabecula of spongy layer; *b*, gland with epithelium still on wall; *c*, gland-space with degenerating epithelium.

In some glands the epithelium is still attached to the walls.

The glands are mostly paraliel to muscle of uterine wall. X. 40.

FIG. 23. ANOTHER FROM SAME.

a, trabecula of spongy layer; *b*, gland-spaces; *c*, glands which extend into muscular layer of wall; *d*, muscular layer

The gland epithelium is still attached to most of the gland-walls. X 25.

FIG. 24. ANOTHER FROM SAME.

a, gland-space; *b*, junction of spongy layer and muscle, *c*, muscle.

Most of these gland-spaces contain cast-off degenerating epithelium. X. 25.

FIG. 25. ANOTHER FROM SAME

a, gland spaces; *b*, muscle of wall; *c*, vessels in muscular layer. X. 40.

come somewhat flattened—*i.e.*, it had changed from the columnar to the cubical type, and that the cells had lost their cilia.

In the abortion-sacs which I have examined the naked eye appearances of the surface of the vera were very like those described by Reichert in his twelve-day specimen. Minot found a similar condition in his four-weeks pregnancy case.

I noticed that the mouths of the glands were best seen in the furrows—*i.e.*, in the least developed parts of the vera. On the surface of the raised portions they are seen more rarely after the first week or two of pregnancy. We shall later find out that the reason of this is the obliteration of many of the outer parts of the glands by the pressure of the rapidly increasing interglandular elements of the compact layer of the mucosa.

In six-week specimens the surface of the vera is somewhat altered. It is not so markedly irregular, but more uniform, probably owing to the gradual obliteration of some of the deep furrows by the development of decidual tissue below them. I have also noticed this, as has Eugen Fränkel, in earlier abortion-sacs.

Microscopic Appearances.

During the First Three Weeks.

One of the earliest specimens in which a careful microscopic examination was carried out is that described by Merttens. It consisted of an ovum attached to the decidua and was removed at a curetting. He believed that pregnancy had only advanced for six or eight days. (I shall refer to the uncertain age of this specimen later.)

He noticed the division of the vera into compact and spongy layers. In the latter the gland spaces had begun to enlarge. The long diameters were for the most part slightly oblique to the surface. The epithelium covering the mucosa was cylindrical, the general surface outline showing irregularities. In the outer parts of the glands the epithelium stained more deeply than in the lower parts, and it was somewhat less columnar. The basement membrane was easily seen.

Decidual cell-formation had begun in the outer part of the compact layer, but not in the spongy layer.

During the Fourth and Fifth Weeks.

I have examined abortion-sacs at these periods of pregnancy. As the information to be derived from them regarding the vera is

only partial, I shall give no complete description of them. They show transitional stages between the earliest conditions and that found at the sixth week. I shall, therefore, only refer to them in connection with the following description of the vera, from a case in which the whole pregnant uterus was examined. Minot has described a case in which pregnancy had advanced one month.

During the Sixth Week.

The vera varies from 3 to 7 mm. in thickness. The distinction between compact and spongy is readily made out. The latter may be subdivided into an outer portion where the glands are only slightly branched and a deeper portion where the numerous sections of the branched ends of the glands give rise to the spongy appearance proper.

Lining Epithelium.—This is still to a great extent present, though somewhat altered. Statements have been made to the effect that it is absent at this period. These are probably based upon the examination of sections that have not been fresh nor carefully hardened. Under such conditions the epithelium may soon disappear. The columnar cells are now cubical or even more flattened in parts. Their nuclei are rounded, or flattened somewhat parallel to the surface of the decidua. The cilia have entirely disappeared. Here and there strips of epithelium or individual cells may be found detached from the surface. In some parts the cell-substance has greatly disappeared, the nucleus alone being left. Nuclei also may be found in various stages of degeneration. The probable cause of degeneration in the covering epithelium is the rapid growth of the interglandular cellular tissue giving rise to decidual structure and so causing stretching, flattening, and separation of the superjacent epithelium, which does not take part in the development.

Glands.—The glands have increased in size, but I can find no evidence that new ones have been formed. They differ in size, shape, and arrangement from those in the non-pregnant state. One marked feature is the narrowing and obliteration of the portions occurring in the compact layer owing to the lateral pressure of the surrounding growing decidual tissue. The obliteration of the mouths of the glands is especially marked in the elevated areas of the vera.

The deeper portions of the glands are enlarged in size in most cases, so that the spongy nature of the lowest part is more promi-

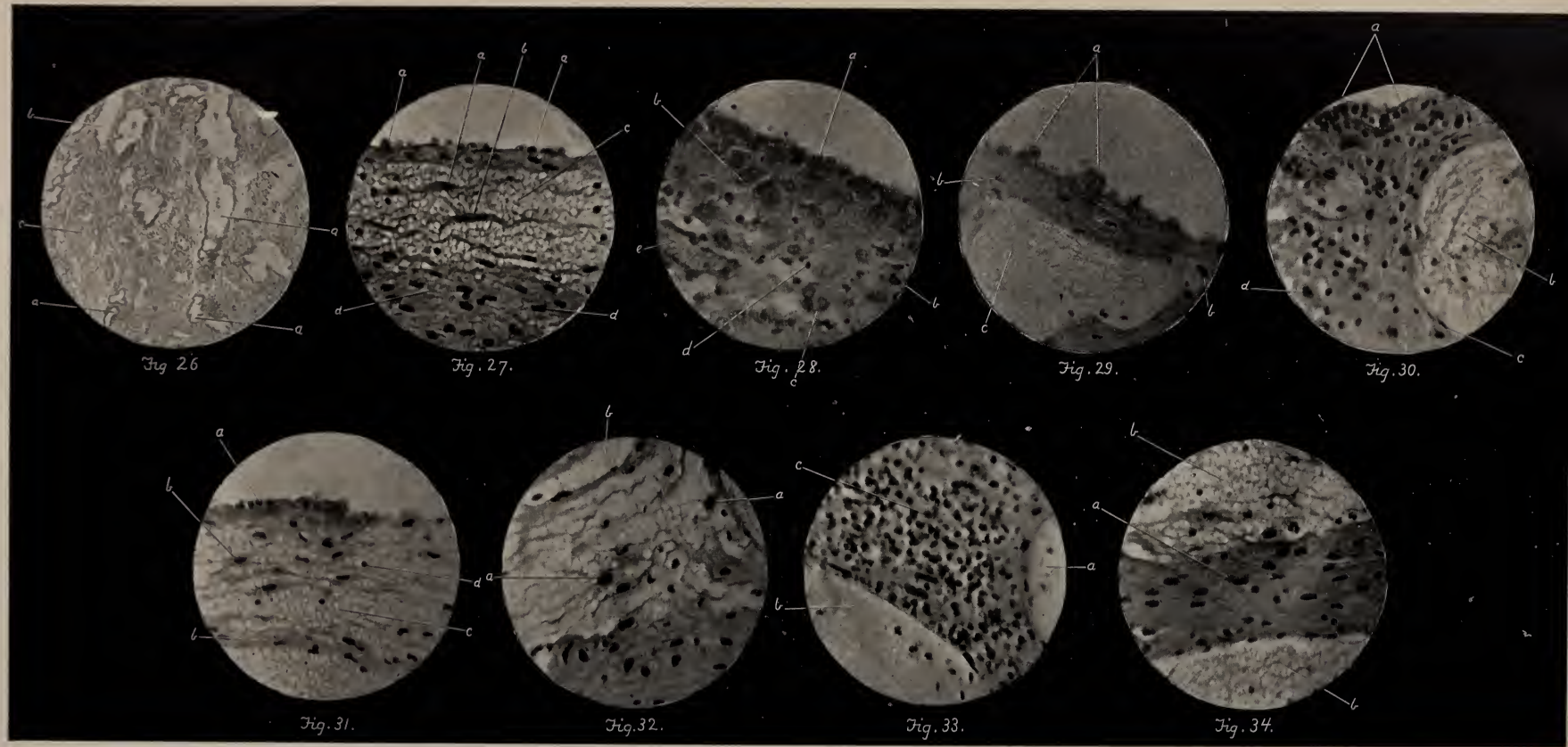


FIG. 26. ANOTHER SECTION FROM 6-WEEKS SPECIMEN.

a, gland with epithelium preserved on wall; *b*, gland with epithelium largely absent; *c*, decidual cells. X. 40.

FIG. 27. SECTION OF COMPACT LAYER OF THE VERA FROM SAME SPECIMEN.

a, surface epithelium, somewhat flattened and broken up; *b*, large branching decidual cell in the midst of a blood-extravasation; *c*, blood; *d*, closely packed decidual tissue; cells are mainly parallel to surface. X. 300.

FIG. 28. ANOTHER FROM THE SAME.

a, surface-epithelium, somewhat degenerated; *b*, large decidual cells; *c*, large multinucleated decidual cell; *d*, leucocyte; *e*, capillary. X. 340.

FIG. 29. ANOTHER FROM THE SAME.

a, surface-epithelium degenerating; *b* decidual tissue, with largely obliterated cell outlines; *c*, blood-sinus. X. 300.

FIG. 30. ANOTHER FROM THE SAME

a, surface-epithelium, cubical in shape, *b*, blood-sinus; *c*, endothelial cell on sinus-wall; *d*, decidual cell. X. 300.

FIG. 31. ANOTHER FROM THE SAME.

a, remains of surface-epithelium; *b*, decidual cell; *c*, blood tearing up decidual tissue. X. 300.

FIG 32. ANOTHER FROM THE SAME.

a, decidual cells; *b*, blood. X. 300.

FIG. 33. ANOTHER FROM THE SAME.

a, *b*, blood-sinuses; *c*, decidual cells and leucocytes. X. 300.

FIG. 34. ANOTHER FROM THE SAME.

a, densely packed decidual tissue; *b*, blood-sinus.

In the upper one the wall has been slightly torn up

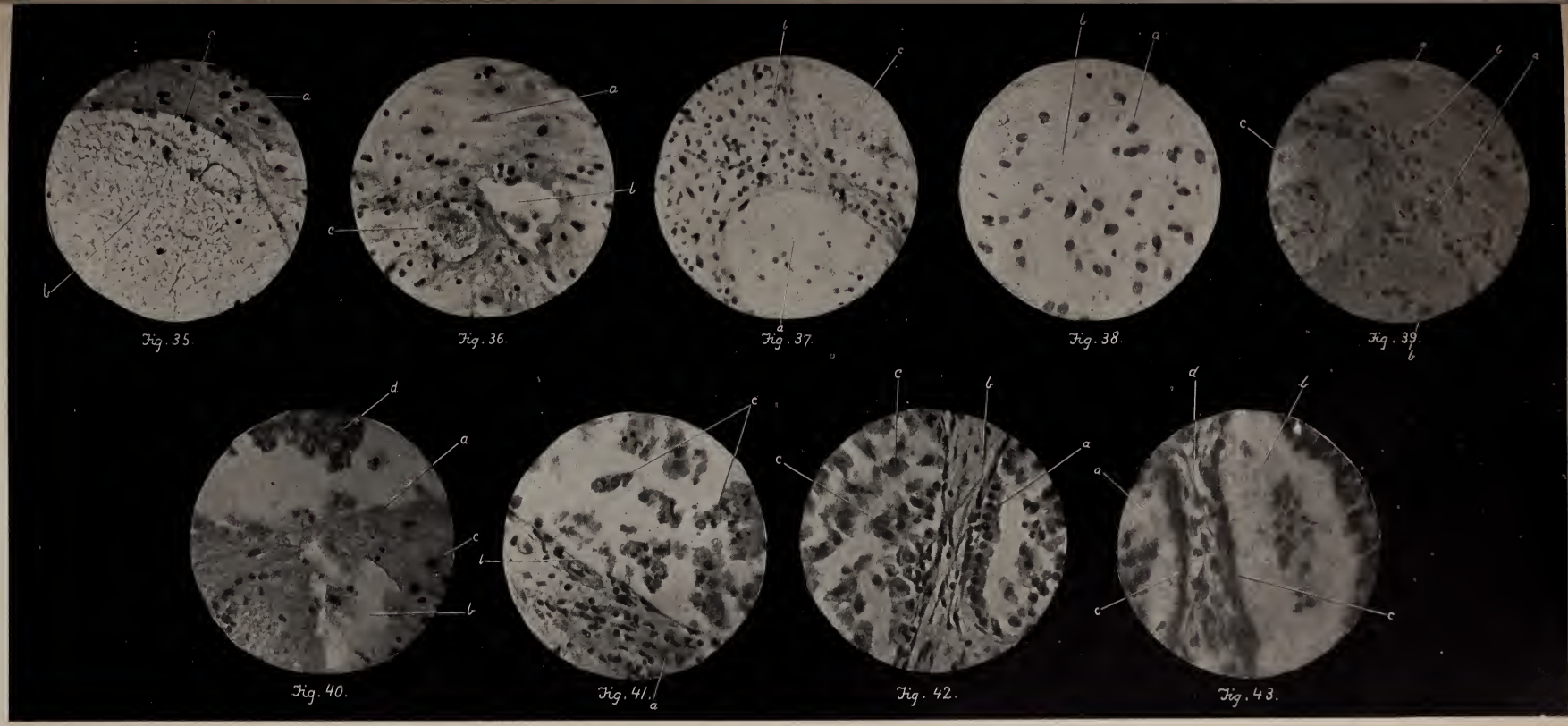


FIG. 35. ANOTHER SECTION OF VERA FROM 6 WEEKS SPECIMEN.

a, decidual tissue ; *b*, blood in sinus. X. 300.

FIG. 36. ANOTHER FROM THE SAME.

a, decidual tissue ; *b*, gland with degenerating epithelium in its lumen ; *c*, blood-sinus. X. 300.

FIG. 37. ANOTHER FROM THE SAME.

a, blood-sinus ; *b*, decidual tissue : *c*, gland with degenerating epithelium. X. 300.

FIG. 38. ANOTHER FROM THE SAME.

a, decidual cells ; outline cannot be traced ; *b*, inter-cellular matrix. X. 300.

FIG. 39. ANOTHER FROM THE SAME.

a, very large decidual cell ; *b*, smaller decidual cell ; *c*, blood-sinus. X. 300.

FIG. 40. ANOTHER FROM THE SAME.

a, gland wall with a few altered epithelial cells attached ; *b*, another gland space ; *c*, decidual tissue ; *d*, cast-off epithelium of gland. X. 300.

FIG. 41. SECTION OF SPONGY LAYER FROM THE SAME SPECIMEN.

a. decidual cells of trabecula ; *b*, wall of gland denuded of epithelium ; *c*, cast-off epithelium of gland in various stages of degeneration. X. 300.

FIG. 42 ANOTHER FROM THE SAME.

a, wall of gland, considerable amount of epithelium attached ; *b*, inter-glandula-trabecula ; *c*, cast-off cells of another gland-space. X. 300.

FIG. 43. ANOTHER FROM THE SAME.

a, *b*, gland-spaces ; *c*, cubical epithelium attached to gland-wall ; *d*, inter-glandular trabecula. X. 300.

nent than in the non-pregnant state. In many parts the spaces show a tendency to be arranged with their long axes nearly parallel to the surface. This suggests the explanation that, as increase of the size of the mucosa has occurred, the pressure of the intrauterine contents against the mucosa has forced the enlarging glands to become arranged in this manner.

The glandular epithelium is greatly altered. Only rarely is it found of normal columnar shape. In most parts it has become cubical or even more flattened. As a rule one finds that the greatest changes are most marked in the outermost divisions of the glands. In many the cells are largely shed, either in large masses or in small groups. The cast off cells show various stages of degeneration. The outlines become irregular. In some the protoplasm becomes finely granular; in others it is swollen, staining lightly. Here and there masses are quite changed into hyaline material. In several gland-spaces, leucocytes have passed through the wall and are found among the degenerating cells.

The explanation of this great alteration in the glandular epithelium is not very apparent. The appearances suggest the prominence of a mechanical factor. The gland walls are stretched unduly as a result of the increase in the interglandular elements and the epithelium consequently becomes stretched and separated, gradually becoming cast-off into the gland lumen, undergoing degeneration.

Interglandular Tissue.—The most marked change in this tissue is the development of decidual cells. This has undoubtedly begun in the outermost layer of the mucosa. At this period of gestation it is almost, though not entirely, limited to the compact layer and is most advanced in the outer part. The trabeculæ of the spongy layer are, for the most part, thinner than in the non-pregnant state. Occasionally may be seen a large solid mass of connective tissue elements lying like an island in the midst of the spongy layer.

The structure and arrangement of the decidual cells are of a varied nature. Some are rounded, others oval, others polygonal, others spindle-shaped. (Many of these appearances are simply due to the different planes in which the cells have been cut.) The nuclei are large and somewhat rounded. In most places the cells are connected by broad or slender processes. In some parts no processes can be seen. Sometimes the spindle-shaped cells lie in compact bundles, the individual units appearing to be distinct

from one another. Occasionally similar bundles may be found torn up by blood extravasation ; the processes connecting many of these cells can, as a result, be easily traced. Near the surface of the vera the cells are for the most part arranged with their long axes parallel to it.

From these appearances it is evident that the nature of the change from the non-pregnant condition has been that of marked hypertrophy of the pre-existing embryonic cellular elements, both nucleus and cell-matrix having become enlarged. The proportion of the latter to the size of the nucleus is much greater than in the non-pregnant state. That hyperplasia also occurs seems to be certain. Actual cell-division can be distinguished in parts. It is probably due to this process that in many places the decidual cells are found with more than one nucleus. No attention need be paid to the views of Hennig, Ercolani, Langhans, and others, that the decidual cells develop from leucocytes ; nor to those of Friedländer, Frommel, Ayers and others that they arise from the epithelium of the glands and from that on the surface. These opinions must be entirely abandoned.

Blood-Vessels.—The condition of the vessels varies greatly. In the compact layer in some parts there is enormous dilatation of the capillaries and also some increase in size of the small arteries and veins communicating with them. As a rule the dilated capillaries which form the large blood spaces are lined with a single layer of flattened endothelial cells. Around the vessel the decidua has generally a compressed appearance, the cells being flattened parallel with the walls.

In other parts, there is only a moderate increase in the size of the capillaries, and in others scarcely any is found. Here and there small extravasations of blood are found in the decidual tissue. They may be found localized or diffused through a small area, having dissected the cells from one another.

Eden states that an essential change in the formation of the early vera is extensive rupture of blood-vessels, just as in menstruation. In fact, he is of the opinion that decidual formation takes place in the uterus which has recently menstruated, owing to the influence of conception. I cannot at all corroborate his statement as to hæmorrhage. In normal cases I believe it to occur only to a slight extent.

There is no proof that menstruation is necessary to the fixation and growth of the ovum. I have fully discussed this matter in my

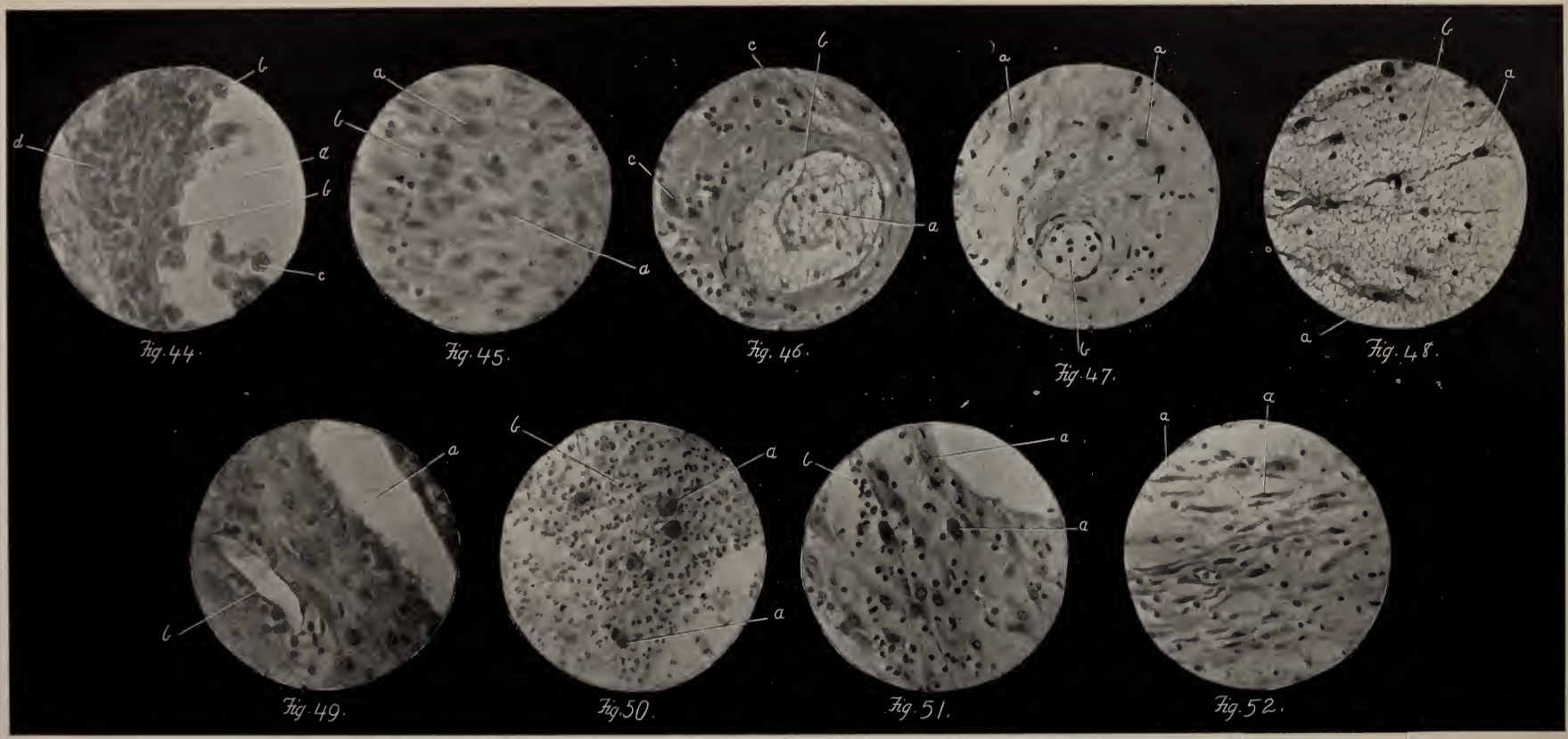


FIG. 44. ANOTHER SECTION OF SPONGY LAYER FROM 6-WEEKS SPECIMEN.

a, lumen of gland; *b*, epithelium being cast off from wall; *c*, degenerating epithelial cells; *d*, decidual cells. X. 300.

FIG. 45. DECIDUAL LAYER OF COMPACT LAYER FROM 6 WEEKS SPECIMEN.

Note the different shapes of decidual cells. X. 300.

FIG. 46. ANOTHER OF THE SAME.

a, blood-sinus; *b*, endothelial cells; *c*, decidual cell. X. 300.

FIG. 47. ANOTHER OF THE SAME.

a, large decidual cells; *b*, capillary vessel.

FIG. 48. ANOTHER FROM THE SAME.

a, decidual cells; *b*, blood from decidual vessels extravasated into decidual tissue. X. 300.

FIG. 49. ANOTHER FROM THE SAME.

a, gland-space; *b*, capillary; *c*, decidual cell.

FIG. 50. ANOTHER FROM THE SAME.

a, decidual cells with very large nuclei. One cell has two nuclei; *b*, small decidual cells and leucocytes. X. 300.

FIG. 51. ANOTHER FROM THE SAME.

a, large decidual cell; *b*, leucocytes. X. 300.

FIG. 52. ANOTHER FROM THE SAME

a, elongated spindle-shaped decidual cells, ar-

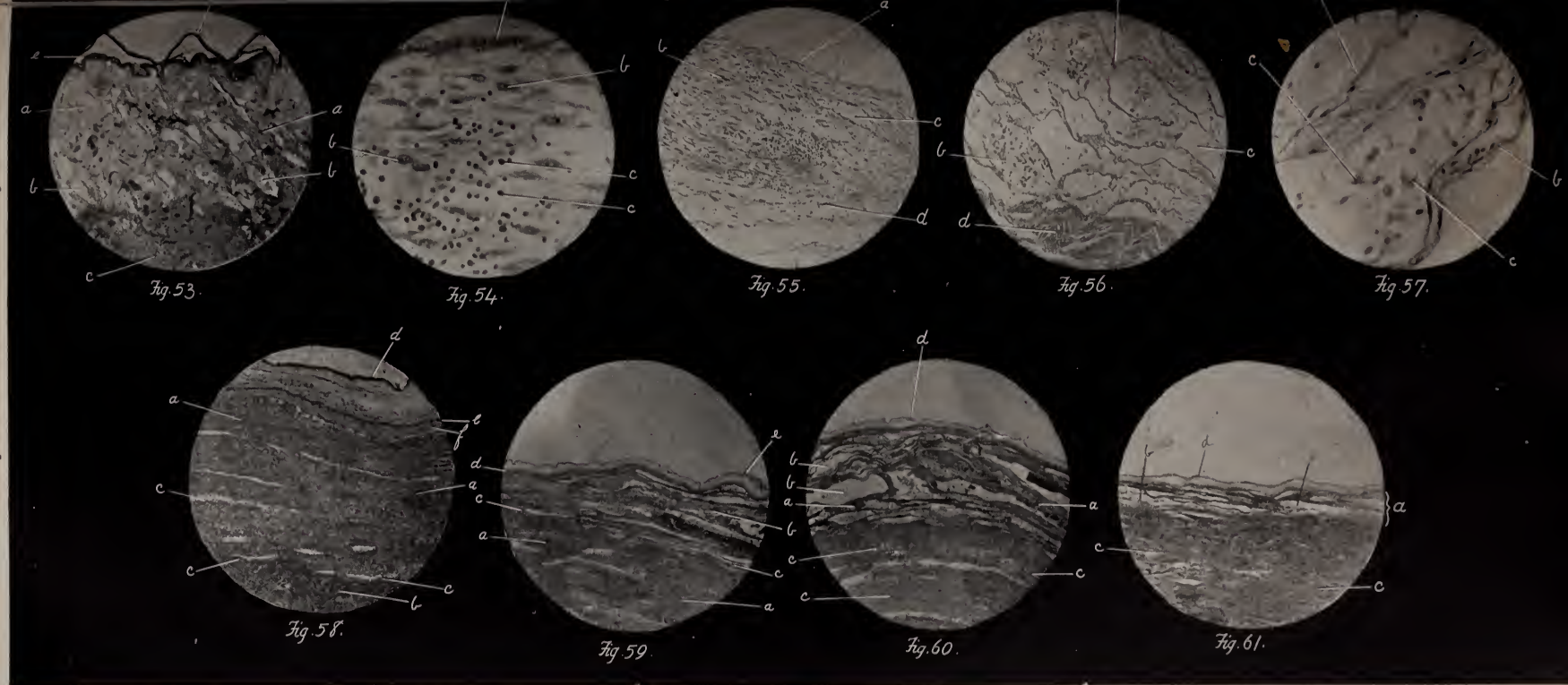


FIG. 53. SECTION THROUGH INNER PART OF UTERINE WALL, NON-PLACENTAL AREA, IN 4TH MONTH OF PREGNANCY.

a, interglandular tissue ; *b*, gland-spaces ; *c*, muscular part of wall ; *d*, amnion ; *e*, chorion.
In this section there is no well-marked distinction between compact and spongy layers. X. 25.

FIG. 54. ANOTHER SECTION FROM SAME.

a, flattened cells of wall of gland ; *b*, large decidual cells parallel with surface ; *c*, leucocytes. X. 300.

FIG. 55. ANOTHER FROM THE SAME.

a, surface of Vera, from which the amnion and chorion have been torn ; *b*, decidual cells, mainly spindle-shaped and loosely arranged ; *c*, capillary vessel ; *d*, junction of compact and spongy portions of decidua. X. 80.

FIG. 56. ANOTHER FROM THE SAME.

a, thin trabecula of spongy layer ; *b*, débris of cast-off epithelium of gland ; *c*, lumen of a gland ; *d*, muscular part of uterine wall. X. 80.

FIG. 57. ANOTHER FROM THE SAME.

a, *b*, thin trabecula of spongy layer ; *c*, cast-off epithelial cells in gland lumen. X. 300.

FIG. 58. SECTION THROUGH INNER PART OF UTERINE WALL. NON-PLACENTAL AREA, IN 6TH MONTH OF PREGNANCY.

a, decidual tissue ; *b*, muscular part of wall ; *c*, remains of gland-spaces ; *d*, amnion ; *e*, chorion ; *f*, fibrin-layer between chorion and Vera.
Note how few glands are in this section. The Vera is mainly compact. X. 80.

FIG. 59. ANOTHER FROM THE SAME.

a, muscle ; *b*, Vera, more spongy and thinner than in last section ; *c*, gland-spaces at junction of decidua and muscle ; *d*, chorion ; *e*, amnion. X. 25.

FIG. 60. ANOTHER FROM THE SAME.

a, trabecula between gland spaces ; *b*, gland space ; *c*, muscle ; *d*, amnion.
The decidua is spongy throughout in this section. X. 25.

FIG. 61. ANOTHER FROM THE SAME.

a, decidua ; *b*, gland-spaces parallel with the surface ; *c*, muscle ; *d*, amnion. X. 25.

work on ectopic pregnancy, and have pointed out that pregnancy may occur in a girl before the onset of menstruation, during lactation when there is no menstruation, during periods of amenorrhœa at the menopause and in diseased conditions of the body, and in the rudimentary horn of a malformed uterus in which menstruation has never occurred.

Moreover, it is to be remembered, menstruation does not occur in the great mass of mammalians, the fertilized ovum entering into relationship with the normal unaltered mucosa.

During the Second Month.

The vera has been carefully studied at this period by Gustav Klein. The description given by him is very like that which I have given for the sixth week. He noticed that a good many of the gland-spaces near the muscular layer of the uterine wall still contained columnar epithelium very little altered, but that near the serotina it was more changed. Doubtless variations occur in different specimens in regard to the rapidity with which changes occur.

According to G. Klein, the highest stage in progressive development is reached by the vera at the end of the second month. I do not think any very definite period exists, though it is undoubtedly between the second and third months as a rule. I have, however, noticed slight degenerative changes in the decidual cells at the sixth week. This is probably exceptional.

During the Fourth Month.

The thickness of the vera varies considerably—from 2 to 5 mm. The compact layer is relatively thinner than it was at the second month. All traces of surface epithelium have disappeared. The cells lining the glands in the compact layer have been cast off into the gland-lumen and, in parts, have disappeared. In the spongy layer the gland spaces are very large, and are to a great extent elongated parallel to the muscular wall. This is due probably to compression of the decidua by the intra-uterine contents along with a process of stretching due to the increasing size of the uterus. Only in a few places can a gland-end be found close to or between the muscular bundles, with a well-marked lining of epithelium. The cells are no longer columnar, but cubical. In most of the spaces the epithelium lies in the lumen in various stages of degeneration, and, in some cases, mixed with blood. In many spaces the cell

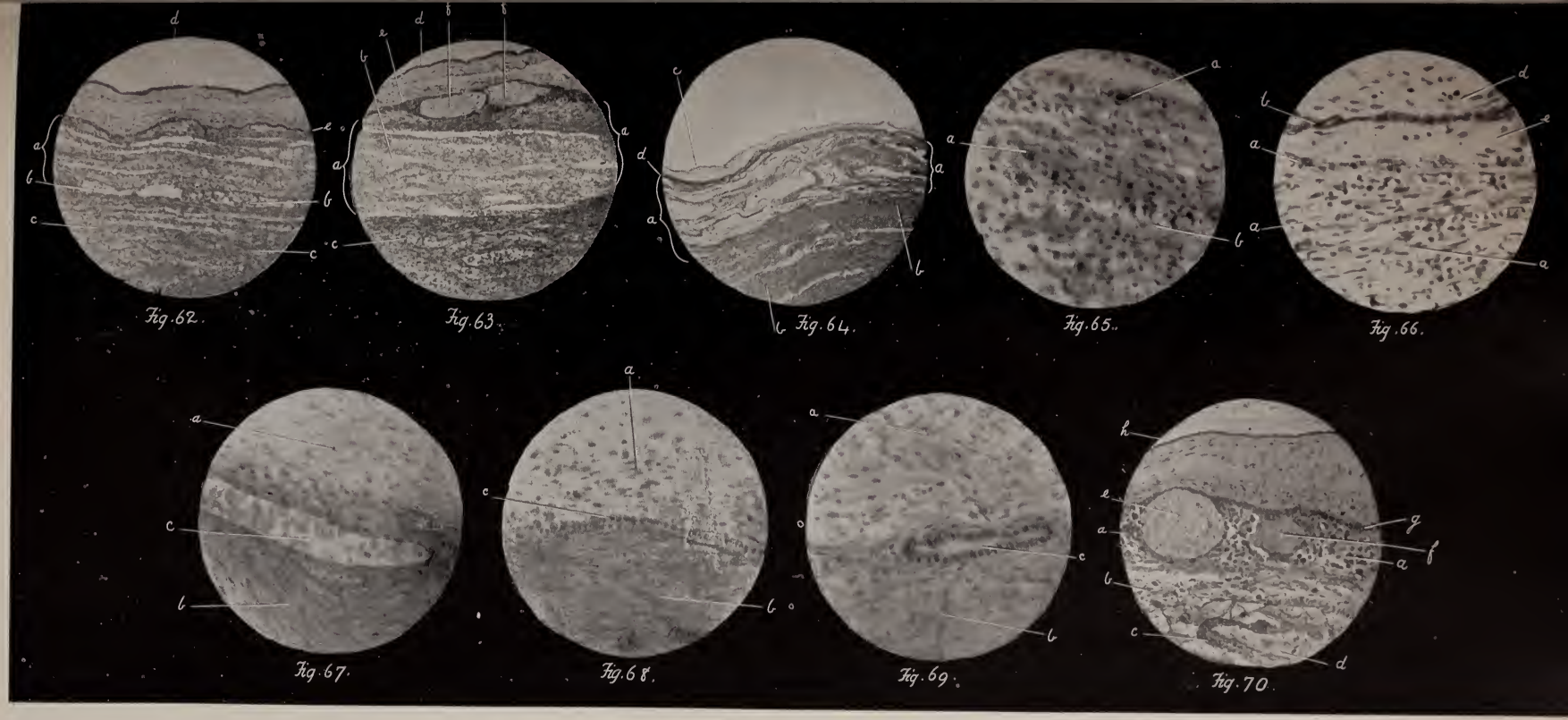


FIG. 62. ANOTHER SECTION FROM 6-MONTHS SPECIMEN.

a, decidua; no distinction can be made between compact and spongy layer; *b*, remains of gland-spaces next muscle; *c*, muscular part of wall. X. 80.

FIG. 63. ANOTHER FROM THE SAME.

a, compact and spongy decidua; *b*, gland-space; *c*, muscle of uterine wall; *d*, amnion; *e*, chorionic epithelium; *f*, villi imbedded between chorion and decidua. X. 80.

FIG. 64. ANOTHER FROM THE SAME.

a, decidua; *b*, muscular part of wall; *c*, amnion; *d*, chorion. X. 25.

FIG. 65. SECTION OF VERA FROM THE SAME.

a, decidual cells; *b*, inter-cellular homogeneous matrix.

Note how indistinct are the cell outlines. X. 290.

FIG. 66. SECTION OF VERA AND CHORION FROM SAME.

a, decidua; *b*, chorionic epithelium; *c*, plasmodial masses on surface of Vera; *d*, chorionic connective tissue; *e*, fibrinous degenerated layer on surface of Vera; rarely found in the non-placental area. X. 300.

FIG. 67. ANOTHER FROM THE SAME.

a, lower portion of decidua; *b*, muscular part of wall; *c*, gland-space with cast-off degenerated epithelium. X. 290.

FIG. 68. ANOTHER FROM THE SAME.

a, decidua; *b*, muscle; *c*, a single layer of glandular epithelium somewhat flattened and compressed between decidua and muscle. X. 300.

FIG. 69. ANOTHER FROM THE SAME.

a, decidua; *b*, muscle; *c*, gland-space at junc-tion of decidua and muscle with epithelium somewhat lower than normal, but attached to wall. X. 300.

FIG. 70. SECTION THROUGH UPPER PART OF VERA, CHORION AND AMNION, FROM A SPECIMEN OF FULL TIME PREGNANCY.

a, thickened chorionic epithelium; *b*, loose decidual tissue; *c*, spongy layer; *d*, gland-space; *e*, *f*, old degenerated villi embedded between chorionic tissue and decidua; *g*, deep layer of chorionic epithelium, next connective tissue; *h*, amnion; its connective tissue is in this section, blended with that of the chorion.

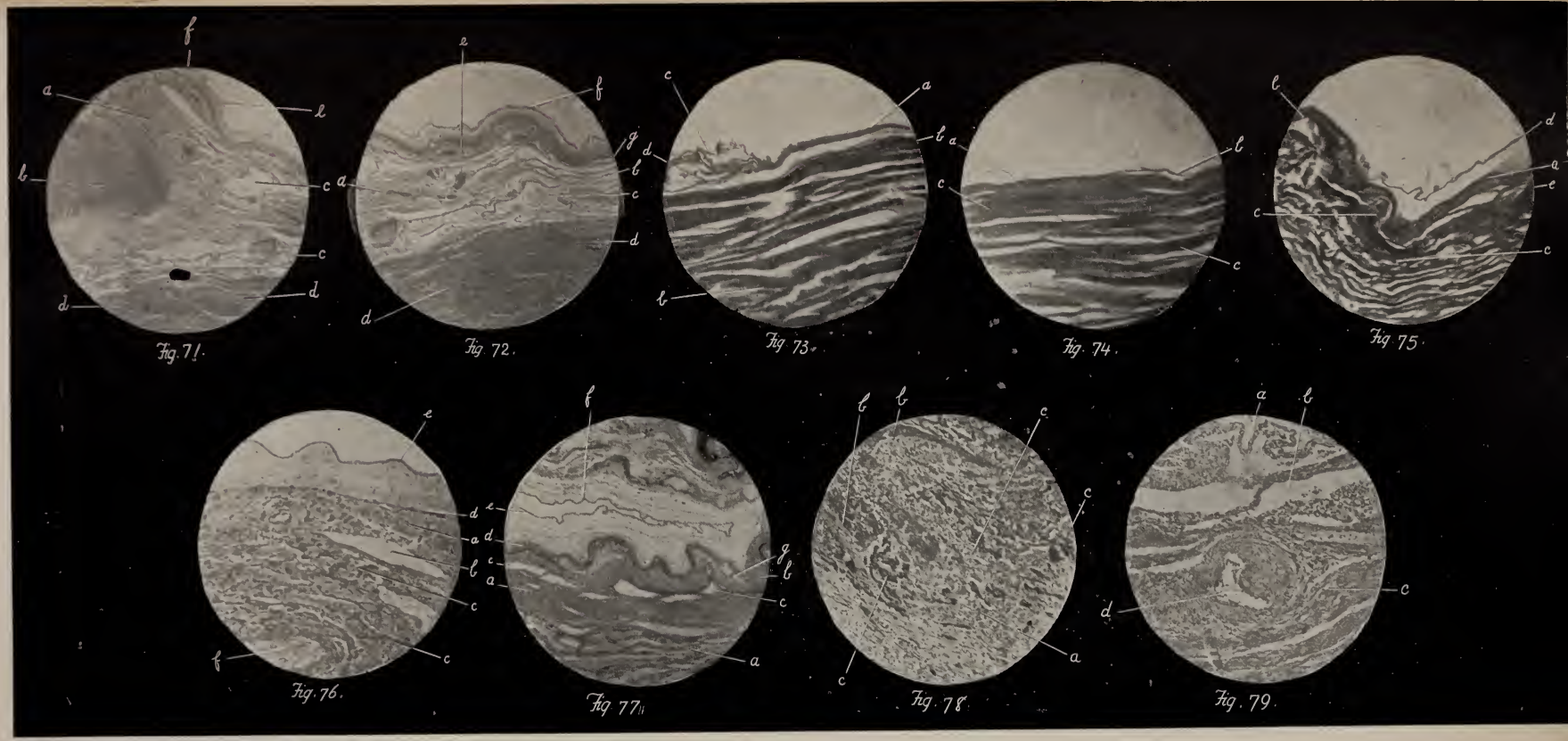


FIG. 71. SECTION THROUGH VERA AND MEMBRANES, CLOSE TO PLACENTA, FROM A FULL-TIME SPECIMEN.

a, compact layer of Vera; *b*, hæmorrhage in decidua; *c*, gland-spaces of decidua; *d*, muscular wall of uterus; *e*, amnion; *f*, chorion. X. 25.

FIG. 72. ANOTHER FROM THE SAME.

a, amnion and chorion, very thin, closely blended to one another and to decidua; the decidual tissue; *b* space; *d*, muscular wall of uterus; *e*, blood-vessel; *f*, amnion; *g*, chorion. X. 25.

FIG. 73. ANOTHER SECTION FROM THE SAME.

a, amnion, chorion and decidua blended; note the small amount of decidual tissue; *b*, muscular wall of uterus; *c*, amnion, somewhat stripped from chorion; *d*, delicate trabecula of decidual tissue. X. 25.

FIG. 74. ANOTHER FROM THE SAME.

a, decidua, close to serotina; *b*, blood-vessel; *c*, mass of plasmodium; note the contrast between it and the decidua; *d*, chorionic epithelium; *e*, amnion; *f*, blood-vessel with hyaline slightly stripped off; *c*, muscle of uterine wall. X. 25.

FIG. 75. ANOTHER FROM THE SAME.

a, chorion and decidua blended; *b*, amnion, chorion and decidua blended; *c*, muscular layer of uterine wall; *d*, amnion separated; *e*, trabecula of spongy layer. X. 25.

FIG. 76. ANOTHER FROM THE SAME.

a, decidua, close to serotina; *b*, blood-vessel; *c*, mass of plasmodium; note the contrast between it and the decidua; *d*, chorionic epithelium; *e*, amnion; *f*, blood-vessel with hyaline

FIG. 77. ANOTHER FROM THE SAME.

a, muscular wall of uterus; *b*, compact laye of uterus; *c*, gland-spaces at junction of de cidua and muscle; *d*, chorion, *e*, amnion: amniotic surface of placenta turned back: remains of a villus. X. 2

FIG. 78. ANOTHER FROM THE SAME.

a, decidua Vera, compact layer, close t serotina, somewhat degenerated; *b*, marke fibrinous or hyal degeneration in the decidua *c*, plasmodial mass. X. 8

FIG. 79. ANOTHER FROM THE SAME.

a, trabecula of spongy layer; *b*, gland-space *c* muscular part of wall; *d* artery with thick

débris has entirely disappeared. The connective tissue elements are also altered in appearance. In general there is a tendency to flattening of the cells, so that they lie more or less parallel to the surface. Many of them are thus spindle-shaped. This is especially seen in the compact layer. In some parts the cells appear closely packed together. Here and there are groups of decidual cells like those found at earlier periods, though, as a rule, they are of smaller size. The cell outlines are indistinct and the matrix has a swollen appearance, taking on the ordinary stains lightly. In a good many places vacuolation is found both in the nuclei and in the cell matrix. It seems as if in certain parts the tissue had returned to an embryonic mucoid condition, or had not advanced much beyond it. In parts cell-division is found.

Leucocytes are found scattered in varying numbers. In the spongy layer the interglandular trabeculæ are greatly thinned. Some of them are broken across, probably due to the stretching resulting from the growth of the uterus and the disproportionate rapidity of growth in the decidua.

Blood-Vessels.—Sinuses are still found in the compact layer, but they are smaller and less numerous than they were at the second month. In some thrombosis has occurred. In the spongy layer and also in the muscle several small arteries and probably also veins are seen in which the intima is greatly thickened. This is due to swelling of the connective tissue elements or to proliferation of the endothelium.

Relation to Reflexa and Chorion Læve.

The exact relationships between the vera and reflexa will be considered under the heading "Decidua Reflexa."

At this period of gestation, the thinned and degenerating reflexa may be found in parts lying close to the vera, perhaps pressed firmly against it. It is doubtful if extensive adhesion takes place. The line of meeting is an irregular one. In parts the reflexa is wanting and the chorion is in direct contact with the vera, whose elevations and depressions it follows. Here and there degenerated remains of the villi of the chorion læve are found. Fuller details are given under the heading "Non-placental Part of Chorion."

During the Sixth Month.

The thickness of the vera varies from 1 to 3 mm. It is thus evident that during the preceding two months it has become some-

FIG. 80. ANOTHER SECTION FROM FULL-TIME SPECIMEN.

a, *b*, *c*, various sizes of decidual cells of compact layer of Vera. X. 300.

FIG. 81. ANOTHER FROM THE SAME.

a, *b*, *c*, various sizes of decidual cells. X. 300.

FIG. 82. SECTION OF PART OF UTERINE WALL WITH MEMBRANES FROM A FULL-TIME UTERUS REMOVED BY PORRO'S OPERATION.

a, Vera arranged in a crumpled condition; *b*, muscular part of uterine wall; *c*, amnion; *d*, chorion. X. 25.

FIG. 83. ANOTHER FROM THE SAME.

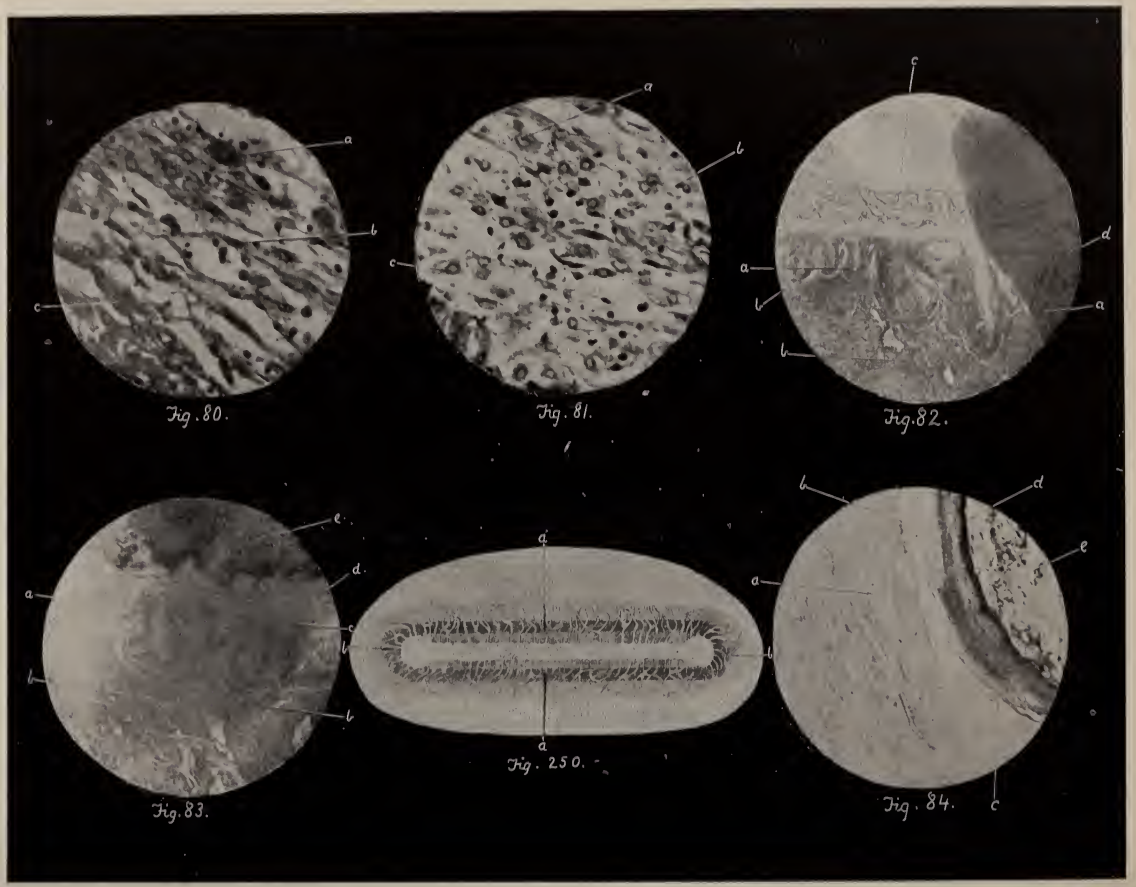
a, crumpled decidua and chorion; *b*, muscle; *c*, amnion; *d*, amniotic surface of placenta; *e*, villi of placenta. X. 25.

FIG. 84. SECTION FROM A 4-WEEKS ABORTION.

a, Vera; *b*, space between Vera and Reflexa; *c*, Reflexa close to Vera; *d*, inner part of Reflexa, in a state of fibrinous or hyaline degeneration; *e*, villi of *chorion tæne*. X. 25.

FIG. 250. REICHERT'S DIAGRAM TO SHOW THE EARLIEST CHANGE IN THE UTERUS IN THE FORMATION OF THE DECIDUA VERA.

a, swelling of anterior and posterior mucosal surfaces; *b*, junction of anterior and posterior uterine walls where the mucosa is not so developed.



what thinned. The compact layer is especially diminished. The elongation of the gland spaces in the spongy layer and their parallelism with the surface is very marked. In several parts the trabeculæ of the spongy layer are pressed so closely together that no spaces exist. Only an occasional gland end near the muscle can be found still lined with low epithelium. The decidual cells are, on the average, smaller than at the fourth month. They are in many parts closely packed together, their long axes being parallel to the surface. Cell-division can be found here and there. Vacuolation of the cells exists in several places. The blood-sinuses have to a great extent become obliterated. Several arteries show more marked changes in their inner coats. No reflexal remains can be distinguished. The chorion is in close relationship with the vera.

At Full Time.

The vera is, on the average, slightly thinner than it was at the sixth month, measuring from .75 mm. to 2 mm. It is of interest to note that while the superficial area of the mucosa of the body has greatly increased, the thickness of the vera which measured at the sixth week from 3 to 7 mm., at full time still measures from .75 to 2 mm. Had not some increase in the quantity of tissue occurred in the mucosa during this period, the thinning would have been much greater, or there would have been a breaking up of the mucosa. It must also be remembered that the spongy nature of the vera has allowed stretching to take place in it coincident with the increasing area due to development of the muscular part of the wall.

Both compact and spongy layers have undergone thinning, the former most of all. In some parts no compact layer worthy the name can be found. The decidual cells are arranged in pretty much the same manner as at the sixth month. There is an increased quantity of embryonic mucoid tissue. In many cells the nuclei are irregular and degenerated, being surrounded with very little matrix. In parts the cells are fused into a faintly staining mass, vacuolated irregularly, the nuclei appearing in various stages of degeneration. In many parts are groups of well-defined decidual cells, though there is a general tendency to the occurrence of swelling in them.

Near the placenta deeply stained cells are found whose nuclei are single or multiple, and also darkly stained. They are single, in groups or chains. They are also found in adjacent parts of the

serotina and of the sub-epithelial layer of the placental chorion. Their nature I shall discuss later.

It is interesting to note that no deeply staining fibrinous-like masses of degenerated decidua vera have been found by me in the decidua vera. As I shall show, this marked form of degeneration is found mainly in the serotina and reflexa. Of course occasionally fibrin may be seen in the vera resulting from old extravasated blood.

(*To be continued.*)

VAGINAL INCISION AND DRAINAGE OF SUPPURATING HÆMATOCELES DUE TO ECTOPIC GESTATION.*

By Charles P. Noble, M.D.,

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The first case of hæmatocele treated by operation was operated upon by Récamier, by vaginal incision. Récamier operated with the impression that the case was one of pelvic abscess. The same or a similar blunder was made by various surgeons, including Malgaigne. Until the comparatively recent discovery was made by Tait, that almost all cases of hæmatocele are due to ruptured tubal pregnancy, the settled practice was to use expectant treatment for hæmatocele, unless suppuration occurred in the mass, when incision and drainage was recommended. Undoubtedly many cases of suppurating hæmatocele due to extra-uterine pregnancy were treated in this way, although the practitioner had no idea that he was dealing with ectopic gestation. Hermann has considered the question of vaginal incision and drainage systematically. It is not my purpose to discuss the history of the subject, but merely to report two cases of suppurating hæmatocele which have been treated by incision and drainage.

Case I.—Mrs. S., aged thirty-one, V.-para, was first seen December 20th, 1895. She had been in bed since September 21st, and had a distinct history of ectopic pregnancy with rupture. She was quite feeble from the long continuance of the pelvic peritonitis, and had lost about fifty pounds in weight. Operation was

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* Read before the Philadelphia Obstetrical Society, January 7, 1897.

advised, but for a time not accepted. January 1st she was admitted to the Kensington Hospital for Women, and on examination it was discovered that a sinus was present behind the cervix, through which the femur bone of a fœtus was removed. As her condition improved for some days after admission, she was not operated upon until January 14th, when the sinus was dilated and the vaginal wall incised and a pelvic abscess in front and to the left of the rectum washed out. Most of the fœtus and clots had been discharged before the operation. She made an uninterrupted recovery, and at this time is doing full work and feeling well.

Case II.—Mrs. S., aged thirty-four, married fourteen years. She has had two children and three miscarriages. For the past year she has been ailing. Menstruation, however, was normal until October, 1896. She began to menstruate at the expected time, but bled very freely, and continued to bleed indefinitely. She had severe pain, paroxysmal in character, which lasted only a few days. The pain, together with the amount of flow, was sufficient to keep her in bed for a week, and she was in her room two weeks more. She improved somewhat, and was about the house for three weeks, however, having more or less pelvic discomfort; and during all this time there was more or less tendency to metrostaxis. She was then seized with violent pain and a tendency to fainting, and shortly after developed a temperature of 104° F., which persisted for four weeks, with a corresponding pulse rate of 110 to 130. I saw her first December 6th with Dr. Greenwald. Her temperature was 102°, pulse 110, and she looked quite feeble and anæmic. Upon examination, a large mass was found anchored in the pelvis behind the uterus and to the left. The uterus was pushed forward, upward, and to the right. Immediate operation was advised, and the patient was admitted to the Kensington Hospital for Women December 7th, under anæsthesia, a semilunar incision was made through the vagina well behind the cervix and to the left. A pair of sharp scissors was then pushed into the mass and the opening enlarged by spreading the scissors in withdrawing them. The pus and broken-down blood clot was washed out by irrigation, and the cavity packed with gauze for drainage. No fœtus was seen. The patient's temperature after the operation became normal and continued so, and she made an uninterrupted recovery. She was discharged December 30th.

These two cases have been reported to bring this subject to the

attention of the Society, and to elicit discussion on the proper method of dealing with this particular class of cases of ectopic pregnancy. That this plan of treatment is far better than a radical operation, either by abdominal section or vaginal hysterectomy, I have no question. Obliteration of the vessels in such cases has had time to occur, and the danger of hæmorrhage from the tube or placenta is slight or non-existent. It converts what would otherwise be a grave operation into a very simple one. A further advantage is that in many cases the fertility of the patient will be conserved. Radical operation by vaginal hysterectomy inevitably destroys this function. Abdominal section under these circumstances is likely to produce the same result, as, owing to the pelvic peritonitis, in all probability the appendage not involved in the tubal pregnancy is bound up in fresh lymph, and would likely be so injured in removing the clots and in breaking up the fresh lymph, that its removal would appear necessary. The only objection to the method of operation is that a damaged appendage is left in the pelvis, which may subsequently give trouble. The answer to this objection is, that if a hazardous operation can be converted into a simple one in such cases as a general rule, in the exceptional cases when the damaged appendage does give subsequent trouble, necessitating a secondary operation, the risks will be at least no greater and probably much less than had a radical operation been done in the first place.

I have been much pleased with the result secured in these two cases. In one the cure seems to be complete, as now a year has elapsed and the patient is entirely well. The other is too recent to estimate the ultimate result, but the primary one is all that can be wished. The incision should be ample and in the bottom of the mass to be drained, to secure good results. Tapping and mere punctures do not give drainage, and are to be condemned.

A REPORT OF THIRTY CASES OF PELVIC INFLAMMATION OPERATED UPON BETWEEN JULY 1, 1895, AND JULY 1, 1896, BY VAGINAL INCISION AND DRAINAGE.*

By Amos Wilson Abbott, M.D., Minneapolis.

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In order to avoid any inaccuracy arising from possible errors in diagnosis or confusion of cases, the notes in these cases for the condition and method of operating were taken immediately after each operation. The data for results were collected, for the most part, between December 15, 1896, and January 10, 1897, all for the especial purpose of determining in how large a number there would be satisfactory cures by this one method of treatment.

These cases include only those in which *no part of any organ was removed* and in which the opening into the peritoneal cavity was made by the vagina, posterior to the cervix.

It is also proper to state that during this period the following classes of cases of pelvic inflammation were not operated by the vagina:

1. Tubercular.
2. Those complicated by large myomata or cystic growths.
3. Those in which there was a probability of an accompanying intestinal obstruction, appendicitis or abscess above a line uniting the anterior superior spinous processes of the ileum.
4. Those in which there was a suspicion of malignant disease beyond the uterus.

It should also be stated that a few cases operated upon in the same manner as those given in the accompanying table, but where organs or parts of organs were wholly or partially removed on account of laceration caused by breaking up adhesions, etc., are not included in the table, but if included would make a higher percentage of permanent cures.

All other cases of pelvic inflammation were operated by this method without further selection, and are all included in the table.

* Read before the Chicago Gynæcological Society, January 15, 1897.

the intention being to arrive at an estimate of the results obtained by treating all possible cases of pelvic inflammation by vaginal incision and drainage and on the basis of extreme conservatism.

The method of operating was in all cases substantially as follows : An incision large enough to admit two or three fingers was made posterior to the cervix ; all accessible adhesions were thoroughly broken up ; the fingers in the pelvis were assisted, when needed, by abdominal pressure with the other hand, and at the same time all abscess cavities were opened widely ; all organs, as far as possible, were replaced. Lastly, placing of iodoform gauze for drainage and retention of prolapsing parts. For drainage, the gauze was loosely twisted, was carried to the highest point in each abscess cavity, using a separate strip for each abscess. For retention of prolapsed parts, the gauze in separate strips was placed in more bulky masses, so as to best subserve that purpose. Additional gauze was loosely laid in the vagina and left protruding, so as to come in contact with gauze placed over the vulva.

Curetting was done in a few cases when especially indicated by a profuse, bloody, purulent, or leucorrhœal discharge.

Three cases were supplemented by Alexander's operation. The value of these statistics is probably not materially affected by these measures, except in so far as the comfort of the patient was increased and the tendency to the recurrence of inflammation diminished by the cleansing of the uterus, and by the maintenance of its normal position.

This table shows, first, that there were no deaths ; second, that 27 of the 30, or 90 per cent., have perfectly recovered and are attending to their daily duties, most of them being hard-working women.

The first case among the imperfect recoveries (No. 2 in the table) has a slightly enlarged, but not painful ovary. The uterus is not quite normally movable. She still has painful menstruation, a tender right movable kidney, much gastric disturbance, and a chronic inflammation of the middle ear. Notwithstanding that she insists that her pelvic troubles are decidedly better, and that she would rather be as she is than have her organs removed, she was placed among the imperfect cures, because it is possible that much of her discomfort should be charged to the remaining pelvic trouble.

Case No. 10, condition cannot be ascertained, but it is known that she had a recurrence of the acute symptoms about a month

and a half after the operation, from which she recovered promptly and sufficiently to travel to California.

Case No. 30 had a recurrence of inflammation with pus, for which I made a vaginal hysterectomy in October, 1896.

It is proper to state that 10 of the 30 are of child-bearing age and married. None, I think, however, have become pregnant.

It will be seen that more than ten months have passed since the last operation, which may be counted on the side of conservatism. This is undoubtedly too short a time to warrant the exclusion of the possibility of recurrence. In recurrent pelvic inflammation, however, the attacks are not commonly more than from two to eight months apart, and taking the very robust condition of most of the 27 cases and the absence of physical signs of disease in the pelvis, the outlook is at least hopeful.

Cases Nos. 7 and 20 were gonorrhœal infections of the tubes, undoubtedly cut short.

There is no tendency to hernia in any of the cases. The convalescence, in accordance with the general experience, was remarkably short. The entire absence of anything like a fresh infection of the peritonæum, the freedom from shock, pain, nausea and intestinal paralysis, were in marked contrast to the history of the first few days of what we would call an uneventful recovery from a supra-pubic section with the removal of the adnexæ.

A few points learned by experience in these operations may possibly be of interest.

An elevation of the pelvis of not more than four inches, while not enough to favor the backward flow of fluids will often be of service in keeping back the intestines or omentum, as well as affording a better view of the parts when desired.

The left lateral position is not a good one for the operation, and especially bad for re-dressing the wound, on account of the admission of a large amount of air and a tendency to the distribution of fluids over the peritonæum, unless we are certain that the general peritoneal cavity is shut off above the abscess.

Nothing seems to be gained by the irrigation of abscess cavities, except possibly of the tubes.

Iodoform gauze is a better drain than wicking, this being supported by experiments made outside of the body, showing that gauze, after it is once saturated, will carry over a third more fluid than wicking in the same time. If the gauze is left for about a

week before the first dressing, it is removed with less pain to the patient, and no harm has resulted.

Sutures of the peritonæum to the vaginal mucosa rather interfere with than hasten the proper healing of the parts.

In conclusion, it may be said that the above statistics would indicate that this operation should be adopted, at least as a preliminary measure, in all cases of pelvic inflammation uncomplicated by tuberculosis, appendicitis, intestinal obstruction, malignant disease or large or inaccessible tumors or abscesses.

21 South Tenth Street, Minneapolis, Minn.

TABLE ACCOMPANYING A REPORT OF THIRTY CASES OF PELVIC INFLAMMATION OPERATED UPON BETWEEN JULY 1, 1895, AND JULY 1, 1896, BY VAGINAL INCISION AND DRAINAGE.

No.	By whom Referred.	Name.	Date of Operation.	Exciting Cause.	Condition of the Pelvis Determined during the Operation.	Details of Operation.	Period and Character of Convalescence.	Present Condition.	Summary.		
									Deaths.	Cured.	Not Cured.
			1895.								
1	A. W. A.	Mrs. P.	July 1.	Gon.	R. tube contains 6 oz. pus. L. tube apparently normal.	Postr. vag. section Pus evacuated. Gauze drain. No irrigation.	No temp. or pain. Would not remain in bed.	In perfect health.	....	Yes.	....
2	Dr. Hunter.	Mrs. P.	July 27.	?	Very firm adhesions. Uterus, ovaries and tubes matted together. Small R. tubovarian abscess. Much soft fibrinous exudate in Douglas' sac.	Postr. vag. section Adhesions separated as far as possible. Irrigation. Gauze drain.	In bed 2 weeks. Vomiting 10 days, prolonged by old gastric trouble.	Uterus movable, but not fully. R. ovary large, but not tender. Pelvis otherwise apparently normal.	....	....	Improved.
3	Dr. Thomas.	Mrs. M.	Aug. 6.	Gon.	Double tubovarian abscess. Inflammatory cyst in Douglas' sac. Adhesions throughout. Condition of patient desperate; would not have borne a cœliotomy.	Postr. vag. section Adhesions broken. Abscess and cyst cavities evacuated. Irrigation. Gauze drain.	In bed 10 days, with some fever; 102° F. at times. Sharp recurrence in 2 months on left side. Redrained.	Uterus normally movable. Has not menstruated for 12 months. Nothing abnormal to be detected in pelvis. In robust health. A hard worker.	....	Yes.	....
4	Dr. Bracken.	Mrs. B.	Aug. 19.	Gon.	Two previous attacks of pelvic peritonitis. Pus on both sides; exact location not determined. Dense adhesions.	Postr. vag. section Adhesions not well separated. Pus cavities irrigated and drained with gauze.	Left hospital in 16 days. Some pain, but no temp. for 3 months.	Nothing abnormal in pelvis. Strong and well. Worked hard since leaving hospital.	....	Yes.	....
5	Dr. Rochford.	Miss C.	Sept. 10.	Gon.	R. tubovarian abscess. Left tube and ovary adherent, but no pus.	Postr. vag. section Adhesions separated. Irrigation. Gauze drain.	Left hospital in 3 weeks. Discharge from fistula left by operation for 2 months.	Pelvis normal. Working hard. Health perfect.	....	Yes.	....

No.	By whom Referred.	Name.	Date of Operation.	Exciting Cause.	Condition of the Pelvis Determined during the Operation.	Details of Operation.	Period and Character of Convalescence.	Present Condition.	Summary.		
									Deaths.	Cured.	Not Cured.
			1895.								
6	A. W. A.	Mrs. S.	Sept. 13.	Gon.	Uterus retroflexed and adherent. Purulent salpingitis and ovaritis. Patient very feeble.	Postr. vag. section Adhesions separated. Gauze drain without irrigation. Alexander's operation.	Left hospital in 4 weeks. Severe abd. pain for a few weeks.	Pelvis normal. Uterus in normal position. No pelvic pain. Writes: "Better than ever in my life."	....	Yes.	....
7	A. W. A.	Mrs. B.	Sept. 17.	Gon.	Gon. 2 weeks. Both tubes distended with pus. Several inflammatory cysts. Adhesions throughout, but easily broken.	Postr. vag section Cysts and tubes evacuated. Tubes washed out. Gauze drain.	Left hospital in 2 weeks. Convalescence rapid.	Pelvis normal. Ruddy and in robust health. Hard worker.	....	Yes.	....
8	Dr. Rochford.	Mrs. S.	Sept. 24.	?	Uterus retroflexed. Adhesions firm and extensive. Tubes thickened and very firm. Ovaries imbedded in adhesions.	Postr. vag. section Adhesions separated Gauze drain without irrigation. Alexander's operation.	Left hospital in 24 days. Convalescence smooth.	Pelvis normal. Uterus in normal position. Hard worker and in perfect health	....	Yes.	....
9	Dr. Rochford.	Miss D.	Sept. 26.	Gon.	General peritonitis. Mild type. Small R. tubovarian abscess. Uterus retroflexed, with purulent discharge. Very dense adhesions.	Postr. vag section after curetting uterus. Adhesions separated. R. ovary much torn, but not removed. Gauze drain.	In hospital 2 weeks Uneventful recovery.	Pelvis normal. Uterus in normal position. Gained 20 lbs. Health perfect.	....	Yes.	...
10	A. W. A.	Mrs. C.	Oct. 6.	?	Now genl. peritonitis. Several previous attacks. Pus in both tubes, and several other small pus foci.	Postr. vag. section Pus cavities opened and septa broken as far as possible. Gauze drain.	Left for California in 2 weeks, contrary to advice. Was improving rapidly.	Had recurrence in 2 months.	....	....	Unknown.
11	Dr. Nelson.	Mrs. H.	Oct. 24.	Gon.	Pus in both tubes and other small pus cavities. Inflammatory cyst in Douglas' sac.	Postr. vag. section Thorough evacuation of pus and serum.	Convalescence began immediately. Normal temp. af-	Rosy and in robust health.	...	Yes.	....

No.	By whom Referred.	Name.	Date of Operation.	Exciting Cause.	Condition of the Pelvis Determined during the Operation.	Details of Operation.	Period and Character of Convalescence.	Present Condition.	SUMMARY.		
									Deaths.	Cured.	Not Cured.
			1895.		Acute attack, T. 103° F.	Gauze drain without irrigation.	ter second day. 10 days in bed.				
12	A. W. A.	Mrs. I.	Nov. 11.	?	Double hydrosalpinx; very extensive, though not very firm adhesions.	Postr. vag. section Adhesions separated. Fluid evacuated. Gauze drain.	Gradual, but quite well in 3 weeks, so as to resume her housework.	In perfect health.	....	Yes.	....
13	A. W. A.	Mrs. G.	Nov. 12.	?	Uterus retroverted. Chronic ovaritis and salpingitis. Old, firm and extensive adhesions.	Postr. vag. section Adhesions separated. Gauze drain without irrigation.	In bed 1 week Very rapid recovery.	Uterus in normal position. Very hard worker.	....	Yes.	....
14	Dr. Fifield.	Mrs. P.	Nov. 15.	Gon. suspected.	Desperate case. Patient thoroughly septic. R pelvic abscess size of cocoanut. L. abscess size of orange. Ovaries involved in both abscesses Other small pus cavities.	Postr. vag. section All pus evacuated. Septa broken. Fistula accidentally made by breaking into rectum. Irrigation and gauze drain.	3 or 4 months delayed by secondary abscess, pointing above Poupart's Lig Also by hæmorrhages from bowel.	In splendid health. Fistula healed.	....	Yes.	....
15	Dr. Lalliberte.	Mrs. R.	Nov. 18.	Gon.	Double chronic salpingitis. Recent inflammatory cyst. Old hæmatoma of L. ovary. Many adhesions.	Postr. vag. section Adhesions separated. Cyst and hæmatoma evacuated. Gauze drain.	In bed 3 weeks. Recovery rapid.	In perfect heath, notwithstanding a fresh attack of gonorrhœa in July, 1896.	....	Yes.	....
16	A. W. A.	Mrs. D.	Nov. 30.	Abortion	Double salpingitis. Large R. extra-tubal abscess. Not definitely determined whether R. ovary is involved or not. Very general adhesions.	Postr. vag. section Adhesions separated. Pus evacuated. Gauze drain without irrigation.	In hospital 2 weeks. A slight recurrence of pain and temp. in 1 month relieved by rest.	In robust health. Is a very hard-working woman	....	Yes.	....
17	A. W. A.	Mrs. M.	Dec. 21.	?	Uterus retroflexed. Chronic salpingitis and ovaritis. Small myoma at-	Postr. vag. section Adhesions separated.	3 weeks. No temp.	Pelvis normal. Doing heavy housework for	....	Yes.	....

No.	By whom Referred	Name.	Date of Operation.	Exciting Cause.	Condition of the Pelvis Determined during the Operation.	Details of Operation.	Period and Character of Convalescence.	Present Condition.	Summary. Deaths.	Cured.	Not Cured.
					tached to rectum as well as uterus.	Myomectomy. Gauze drain.		large family.			
18	Dr. Cutts.	Mrs. M.	Dec. 26. 1896.	Gon.	Double salpingitis. Inflammatory cysts and extensive but easily broken adhesions.	Postr. vag. section Adhesions separated. Cysts evacuated. Gauze drain.	2 weeks. One recurrence July, 1896, requiring a second incision.	In good health. Doing her own housework.	..	Yes.	....
19	Dr. Lalliberte.	Mrs. P.	Jan. 7.	?	Very desperate case. Bedridden 6 months. Both tubes full of pus. R. tube contained old, cheesy mass in upper wall. Universal adhesions.	Postr. vag. section Tubes emptied, washed and drained with gauze. Cheesy mass excised.	Six months, due to secondary abscess pointing above Poupart's Lig. Vag. hysterectomy would have been the better operation	General health good Pelvis normal, except that fistula from secondary abscess not quite closed. Doing her own housework.	....	Yes.	....
20	Dr. Weston.	Mrs. J.	Jan. 10.	Gon.	R. tube filled with thin pus. L. tube contained only a few drops. Gonococci found in cells from tubes not in pus. Infected by husband 10 days before.	Postr. vag. section Tubes washed out with bichloride solution and drained with gauze.	In hospital 2 weeks. No temp. or pain	Health perfect. Hard working woman.	....	Yes.	....
21	Dr. Stone.	Miss C.	Jan. 13.	?	Chronic salpingitis. R. ovary contained large hæmatoma, and was adherent to rectum. L. ovary cystic and also contained a large hæmatoma.	Postr. vag. section Adhesions separated. Cysts and hæmatomata emptied. Gauze drain without irrigation.	In bed 2 weeks. Convalescence afterward slow. Patient insisted on being about and overseeing a large establishment.	Health good. Gained in weight. On her feet constantly, but no pain. Uterus freely movable.	....	Yes.	....
22	Dr. Sweet.	Mrs. S.	Jan. 14.	?	Chronic salpingitis. L. tube and ovary closely bound together and to L. side of Douglas' sac. On	Postr. vag. section Adhesions separated. Gauze drain with-	4 weeks in bed. Convalescence rather slow.	Health good. Gained flesh very rapidly. Menstruated only	....	Yes.	....

No	By whom Referred.	Name.	Date of Operation.	Exciting Cause.	Condition of the Pelvis Determined during the Operation.	Details of Operation.	Period and Character of Convalescence.	Present Condition.	Summary.		
									Deaths.	Cured.	Not Cured.
					R. side the adhesions were less firm.	out irrigation.		once or twice since operation.			
23	Dr. Sweet.	Mrs. F.	Jan. 15.	?	R. ovary and fimbriated extremity of R. tube adherent to bottom of Douglas' sac. R. ovary covered in by dense exudate. L. tube and ovary in about same condition, but higher.	Postr. vag. section Ovaries shelled out of exudate. Tubal adhesions separated. Organs packed up high with gauze	Left hospital in 2 weeks. After convalescence rather prostrated on account of severe attack of bronchitis.	Pelvis normal. "No former pains."	....	Yes.	....
24	Dr. Hall.	Mrs. R.	Jan. 21.	Gon.	Exudate extends across pelvis and within 2 in. of navel. Exact relation to adnexæ not made out. Abscess in R pelvis, 1 pint foul pus. Left abscess, 4 oz. Desperate case. Patient septic, delirious, vomiting.	Postr. vag. section Abscesses opened and drained with gauze with irrigation.	In hospital 4 weeks. 2 months after returned with abscess pointing in median line below navel. Drained with gauze.	In robust health. Uterus freely movable.	....	Yes.	....
25	Dr. Weston.	Mrs. B.	Jan. 28.	Gon.	Uterus held in retroflexion by dense adhesions. Inflammatory cyst in Douglas' sac. R. tubovarian abscess. L. tube and ovary slight adhesions only.	Postr. vag. section Adhesions separated. Pus evacuated. Gauze drain without irrigation.	In hospital 2 weeks. Convalescence rapid.	In robust health. Working hard.	....	Yes.	....
26	Dr. Lalliberte.	Mrs. S.	Jan. 28.	?	Inflammatory cyst in Douglas' sac, 6 oz. R. tube, 1 oz. pus. L. tube and ovary normal.	Postr. vag. section Fluids evacuated. Irrigation. Gauze drain.	3 weeks.	Pelvis normal. Health perfect.	....	Yes.	....
27	Dr. Weston.	Miss D.	Jan. 31.	Gon.	Prostitute. Frequent previous attacks of gon. Abscess in Douglas' sac, 4 oz. Adhesions too dense to be separated. Relation of abscess to tubes and condition of tubes and ovaries cannot be determined.	Postr. vag. section Abscess opened. Irrigation. Gauze drain.	In hospital 10 days.	Was well Sept. 1, 1896. Condition of pelvis not ascertained.	....	Yes.	....

No.	By whom Referred.	Name.	Date of Operation.	Exciting Cause.	Condition of the Pelvis Determined during the Operation.	Details of Operation.	Period and Character of Convalescence.	Present Condition.	Summary.		
									Deaths.	Cured.	Not Cured.
28	A. W. A.	Mrs. K.	Feb. 23.	?	Both ovaries and tubes prolapsed and adherent. Small myoma attached to fundus and rectal wall.	Postr. vag. section Adhesions separated. Myomatomy. Gauze drain.	In hospital 2 weeks.	Health good. Attends to her household duties.	....	Yes.	....
29	Dr. Golden.	Mrs. H.	Feb. 26.	?	Thick old exudate between uterus and rectum. R. ovary and tube buried in this exudate. Deep fluctuation.	Postr. vag. section R. ovary and tube shelled out of exudate. Mass above now apparent. Punctured with scissor points, but no pus. Gauze drain.	On sixth day after operation 6 oz. of pus suddenly escaped, after which convalescence was very rapid.	Health good, except chronic rheumatoid arthritis. Pelvis normal.	....	Yes.	....
30	Dr. Legault.	Mrs. M.	June 24.	Gon.	Abscesses on both sides of pelvis, involving tubes and ovaries. Extensive and firm adhesions.	Postr. vag. section Pus evacuated. Gauze drain.	Rapid improvement. Recurrence of pain, fever and exudate in 2 months.	Vag. hysterectomy, Oct., 1896.	....	.. .	Yes.

VAGINAL *VERSUS* ABDOMINAL SECTION FOR PUS IN THE PELVIS.*

By William D. Haggard, Jr., M.D., Nashville, Tenn.

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The treatment of pus in the pelvis has passed through several transitional periods. The old unsatisfactory vaginal puncture gave place to the abdominal era, inaugurated by Tait, and practised by his followers. The removal of pyosalpinx through the abdomen was the innovation which, under the ceaseless scrutiny of the statistician, made the field of abdominal surgery the "Cloth of Gold" of surgical battle grounds. Then total castration through the vagina for double pus disease by the French school and through the abdomen by the American school engrossed the energies of gynæcological operators. These methods have reluctantly given place to modern vaginal section. I say modern advisedly, because it has an essential distinction from the old blind vaginal puncture, with the incomplete evacuation of perhaps one compartment of a multiple abscess, when it is contrasted with the free vaginal incision, careful exploration and thorough evacuation of all pus pockets.

In its present application vaginal section constitutes the most recent acquisition to pelvic surgery, and it bids fair to revolutionize the results in pus disease. It should also be a subject of gratulation that it is a distinctly American procedure. The assertion that the vaginal method is practised by men who are not expert as abdominal operators is incorrect. On the contrary, its employment in the pelvic inflammatory conditions has been evolved by men trained and thoroughly competent in the other operation. Peculiarly enough the men who deprecate vaginal section as a blind procedure are the very men who ignore the advantages of the Trendelenburg position in abdominal work. Surely the fingers skilled in the enucleation of pus tubes through a small incision, unaided by the eye, can work equally well in similar manœuvres *per vaginam*.

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* Read at the Ninth Annual Meeting of the Southern Surgical and Gynæcological Association, held at Nashville, Tenn., November 10–12, 1896.

We should never forget, however, that the pathologic interpretation of pelvic inflammatory processes, now remedied in part by vaginal section, has reached its present wonderful perfection by those fearless and intrepid abdominal surgeons who rescued the pathology of pelvic inflammation from the myths of antiquity.

In the present inquiry, our motive should be, not to champion the one or the other method to the exclusion of the other, but rather to accentuate the relative worth of the would-be rival methods, and to determine, if possible, the positive indications and comparative merits of each. Unquestionably the abdominal route affords facilities for visual inspection wholly wanting in the lower approach. The entire field of operation is kept under surveillance, and the attack on certain portions of the morbid masses can be made with entire confidence as to the safety of visceral integrity. Not so with the pus accumulations. If they are multiple, rupture and peritoneal soiling is inevitable, and that very circumstance is the supreme disadvantage of abdominal incision. While we have often seen the pelvis deluged with pus, and no untoward symptom supervene, we have also seen patients rapidly perish within twelve hours from fulminant sepsis, the result of peritoneal contamination. Without doubt a large proportion of old pelvic abscesses contain so-called spent pus that can be spilled in the peritoneal cavity with impunity. On the other hand, there is that distressingly large class of cases that with singular and classical unanimity succumb on the critical third day to overwhelming sepsis.

There is no certain way of distinguishing these cases clinically, and hence all should be regarded as virulent.

This is a constant and irremediable menace. I have reported at another time* a collected series of pus cases performed in the last year in five metropolitan hospitals in New York and Baltimore, with a mortality of 18.5 per cent. What must it be in the "unheard-from precincts," and in the hands of the great unwashed? This is no reflection on the reported results of many excellent surgeons who do laparotomy with mortalities of two and three per cent. I insist that this mortality does not include consecutive sections for pus, nor has it ever done so.

Abdominal surgeons have developed and perfected a most exquisite aseptic technique in detail and *ensemble*. They penetrate

* Southern Practitioner, November, 1896.

the abdominal wall in less than a minute with lightning despatch. They enucleate with dexterity and assured safety to bowel and bladder. Manipulation is reduced to a minimum. Irrigation is deprived of irritation by physiological salt solution. The technique of glass drainage was perfected to such a degree that we were loath to exchange it for the easier and more efficacious vaginal drainage. Methods for homologous approximation of the abdominal wound have been devised that cause it to heal with beauty and surety, and with an inconsiderable number of subsequent herniæ. They accomplish all this with brilliant and sovereign celerity, and yet abdominal section as a routine practice for pus in the pelvis must inevitably fall into desuetude. Of course, there remain many conditions where the abdominal route offers the best means of approach, notably tubercular inflammation of the ovaries and tubes. The removal of a small unilateral pus tube out of the true pelvis, or attached to the anterior parietes, is much easier extirpated through the upper incision. Yet Polk and others advocate and practice anterior colpotomy for this condition.

The alleged limitations and difficulties of vaginal section are exaggerated. The procedure is comparatively in its infancy. Continued application will broaden and specify the limits of its utility, and increasing experience will augment our manipulative skill and perfect our operative technique.

In addition to the indications and supremacy of vaginal section for evacuating and draining pus in the pelvis, presently to be narrated, its most signal advantages have been exhibited in exploration of the pelvis for adherent annexæ, and small intrapelvic tumors. With the exploring finger in Douglas's space an accurate diagnosis of retro-uterine tumors, inflammatory and annexial, can be easily made, and surgical measures immediately instituted for their relief. In this connection I will refer to the practicability of inspection of the pelvic contents through the vagina, with the patient in the dorso-Trendelenburg posture (Pryor). This is readily accomplished by retracting the posterior wall and the opening in the fornix by the long retractor of Pean, and lifting the uterus upward and forward under the symphysis by the anterior trowel retractor. The intestines gravitate toward the diaphragm, and are further isolated by gauze pads. The appendages, if not adherent, or having been freed, gravitate into the exposed area, where any appropriate conservative procedure can be applied

under guidance of the eye. I have also seen the appendix through the vagina, and the possibility of treating pelvic abscess of appendicular origin through the vagina has been proposed.

It is unnecessary to suggest the ease with which pus is reached through the vagina. It is the natural approach and logical drainage avenue of the pelvis and its contents. The natural history of pelvic pus accumulations is to become walled off above from the abdominal cavity. Opening and clearing out these accumulations is virtually extra-peritoneal. It may then be classed in the category of minor surgery, but it gives major results. There is absolutely no shock. Patients thus treated give no more solicitude than a plastic case, and convalesce as smoothly as a curetting. The entire absence of risk warrants us in *urging* a patient to have it done. And about all patients so approached will give their ready consent. This is a very practical phase, and we cannot ignore the prejudice and possible refusal of patients, especially in private practice, to have more formidable operations.

We can change methods, but we can't change the patient.

Apart from these theoretical and general considerations is their practical employment. The application of methods to individual cases should be the determining factor here as elsewhere in surgery. We are too prone to make cases fit methods. In patients ill from prolonged sepsis, damaged kidneys demand short anæsthesia. Anæmia and asthenia preclude complete surgery, and simple vaginal section with drainage is elevated to the dignity of a life-saving procedure.

I would enumerate the especial indications for vaginal section, aside from explorative purposes, in the three following classes of cases :

1. Early cases of acute suppurating salpingitis.
2. Incipient post-puerperal peritonitis.
3. Large pyosalpinx and true pelvic abscess.

In the first class will be found the cases from recent gonorrhœa and from septic abortion. As illustrative of the first type, I will mention the case of a girl nineteen years of age who came to my clinic last summer with a fluctuating, tender mass in the left side. She had had gonorrhœa a month, and presented herself with considerable pain and afternoon temperature. I curetted her in a hovel and made a posterior section. Upon incising the peritonæum the usual small quantity of free serum escaped. I found the tube fluctuating and tense. The right side was absolutely

clear. I deliberately punctured the distended tube with scissors, and withdrew them opened. A quantity of clear serum gushed forth, followed at the last by a minute quantity of pus and blood that could be easily seen as it trickled over the blade of the depressor. The cavity was irrigated with saline solution and packed lightly with iodoform gauze. The peritoneal opening was occluded with a small roll of the same material, which just entered it and filled the vagina. All gauze was removed on the third day. The peritoneal cavity had been entirely closed by lymph coagulum above the occlusive dressing. The sac cavity was re-irrigated and packed every second day. On the seventh day her temperature and pulse rose for the first time, and examination revealed a tender mass on the right side. On the eighth day I made another section above and to the right of the previous one, and found a "hydrosalpinx" in the descriptive rather than the pathological sense, which was in every way similar to the other one. I believe those *serous effusions in the Fallopian tubes were the preceding pathological conditions to pyosalpinx.*

If this be true, and is the embryonal history of suppurating salpingitis in early gonorrhœa and other inflammatory processes, the prophylactic value of vaginal section will be the greatest boon yet given to infected woman.

In incipient post-puerperal peritonitis, Henrotin has taught us a simple lesson of pregnant truth. Associated with clearing and disinfection of the septic uterus, vaginal section with drainage anticipates pelvic peritonitis and adhesions following puerperal infection. In these cases, at autopsies, I have seen literally puddles of pus in the *cul-de-sac*. The extension of the septic process and pus production was so rapid that nature had not time to encapsulate it. In this and in the ordinary adhesion cases of puerperal suppurative peritonitis it would be rash in the extreme to incur the dangers of supra-pubic section, where the simpler, more rational vaginal evacuation with uterine disinfection and drainage has everything in its favor.

Opening of large pelvic abscesses *per vaginam* needs no espousal of mine. It is nature's safest method, and was the practice of our elder criterions. I have seen the venerable Emmet evacuate large abscesses and drain them by a permanent tube fixed into the vaginal incision by silver sutures. He told me he had done it in selected cases for over thirty years. It was then, as now, the operation of choice. While it must be regarded in most old cases

as temporary, and undertaken for the relief of immediately dangerous symptoms, there still are many permanent cures. A case has been reported of incision of an ovarian abscess with subsequent pregnancy, the other ovary having been previously removed.* There are doubtless many similar cases, at least of restored functional activity, in an ovary previously the seat of suppuration. Such reflections should make us chary of ruthlessly condemning appendages, especially ovarian abscess. "No organ whose function can be maintained should be sacrificed."† (Montgomery.)

Should simple pus letting not effect a cure, subsequent operation for removal of the relics of previous ravages can be done at another session without the dangers incurred in the presence of pus. This is the chorus of our contention.

In old, recurring puriform disease, where both annexæ are so hopelessly destroyed as to demand extirpation, I believe the uterus should also be removed. In such cases the condition of the patient forms the only contra-indication for complete ablation. Not simply because it is a functionless organ and can be removed with low mortality, but because it too is diseased, and if left will continue to produce pain, and prolong the disturbances of the artificial menopause. It may still be the seat of hæmorrhagic discharge, may be infected or re-infected with gonorrhœa, harbor tubercular bacilli and other germs, and incubate cancer cells. In destructive bilateral suppurative disease of the appendages the uterus is enlarged by plastic exudation, may be infiltrated with pus or permeated with latent gonococci. The adhesions binding it in vicious malpositions are intensified after the removal of the purulent extension processes, by re-adhesion of hollow viscera to denuded areas on the uterine wall.

Whenever the uterus is diseased by pyogenic infection beginning its own cavity and extending and destroying the function and integrity of its appendages it should be removed. The sub-pubic operation is preferable to the supra-pubic, for the same reasons that vaginal section is preferable to abdominal section for pus in the pelvis. Moreover, it has been demonstrated that "whatever can be enucleated through the abdominal wall can also be removed through the vagina; and whatever it is impossible to enucleate through the vagina cannot be removed by the abdominal method

* McLaren: Northwestern Lancet, vol. xvi, No. 18, p. 343.

† Montgomery: Therapeutic Gazette, October 15, 1896, p. 649.

except at the price of procedures incomparably more grave and more laborious."* (Ségond.)

The field of vaginal section is to prevent suppuration in early cases ; to anticipate it in puerperal cases ; and to save life in desperate pus cases. It is simple, surgical, and safe. Its application to the pelvic inflammatory diseases of women and to pus in the pelvis is one of the greatest surgical triumphs of the age.

ON HYSTERECTOMY.†

By L. Coyteux Prévôst, M.D., Ottawa, Can.

In 1874, after I had been invested by the learned faculty with the right of "*Secare per orbem terram*," and considering however my scientific luggage insufficient to undertake the great voyage through life, I conceived the idea of going to complete my medical studies on the other side of the Atlantic. I made up my mind to sail at first directly for Ireland, in order to study gynæcology and obstetrics. I entered, as resident pupil, the Rotunda Hospital, which even at that time enjoyed a universal and well-deserved reputation. Among the physicians whom I had the pleasure of knowing in that institution I became intimately acquainted with Fancourt Barnes, the son of Robert Barnes, the great gynæcologist, whose name and fame are known to you all. This excellent friend, Fancourt, of whom I always kept such a sweet remembrance, is to-day gloriously following the footsteps of his father, and already belongs to the brilliant phalanx of British celebrated gynæcologists. When at the end of the summer I had to leave Dublin for France, I would not part with Fancourt without securing the promise that he would come to Paris and spend a few days with me. He kept his word, and came, accompanied by his venerable father. During their sojourn in the great city, I tried to make myself as agreeable as possible, and offered to take them through the hospitals, proposing, among others, St. Louis, where I might introduce them to Péan, whom I had the good fortune of knowing particularly. This proposition was enthusiastically ac-

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* Segond : Annals of Gyn and Pediatry, September, 1896, p. 823.

† Read before the Ottawa Medical Society, November 13, 1896.

cepted. "Let us go to the St. Louis," said Robert Barnes. "I would love so much to see Péan remove a uterus."

Do you hear that, gentlemen? The great, the illustrious Barnes wishing to satisfy his curiosity, and burning with the desire of witnessing a case of hysterectomy—so serious an operation at that epoch that even the masters in surgery hesitated to undertake it!

This occurred hardly twenty-three years ago, and this formidable operation, about which the same Robert Barnes was saying then that the time had not come for forming a confident opinion upon its practice, of which there was, he said, very little ground for enthusiastic advocacy; that operation, the performance of which was the object of a mere curiosity to foreign surgeons coming to Paris; well, not a week elapses to-day without this same operation being performed once or twice in Ottawa by your most humble and obscure servant.

Is not this fact more than sufficient to demonstrate what wonderful progress has been accomplished in gynæcology within the last quarter of the century?

If this meeting was composed of gynæcologists, how many important questions would I not feel tempted to bring before you, and upon which I would willingly inquire into the results of your special and personal experience! Gynæcology, do you see, is a comparatively young branch of surgical science, and the immense development it has received within the last few years has given rise to a great number of obscure points which are awaiting some rays of light thrown on them by the shock of discussion, and the control of collective experience. But you are all general practitioners, my good old friends, with whom I have worked, studied, and discussed, during twenty years, subjects of general practice, and with whom I must part, since I have come to the determination of devoting myself hereafter to special work. But although somewhat swerving, I do not quit you altogether, and I bid no farewell to general pathology, whose teachings the specialist must never forget, and from which, on the contrary, he must incessantly draw the principles that will guide his doings. You, my friends, are at the crossway, at the confluence toward which all the branches of pathology converge; you, at a glance, embrace all the knowledge that is brought in from everywhere, to make of it a synthetical application to the healing art. We specialists, without ceasing to belong to the general body, momentarily leave it off in order to thoroughly explore particular roads. We bring

back from these excursions digested information upon a special subject, which it is our duty to pour from time to time in the bosom of our reunions, focussing, as it were, these varied notions, so that every one should derive benefit from them.

This is what I intend to do this evening, gentlemen, choosing for my subject "Hysterectomy." We shall examine together, when is the removal of the uterus indicated ; what conditions are required to successfully perform this serious operation ; what results we obtain by it ; and, at last, what is the best way of doing it.

Gentlemen, the poor gynæcologist has been of late the object of very bitter criticism, and excessive descants have been made upon the "operative delirium" with which we are supposed to be possessed. This criticism emanates from different sources ; some of it being indulged in by those who ignore totally what they are talking about, finding it easy to condemn what they cannot perhaps do themselves. Other is made in good faith by some surgeons who, in the name of conservative surgery, try to put a stop to the "*prurigo secandi*," as they call it, and make a sentimental appeal to the principles of the citizen. "You needlessly mutilate your patients," they say ; "you castrate without reason the women who seek your advice, and who certainly would be cured with time, patience, and less radical means. You make too little of such important organs as the uterus, the ovaries ; and at that rate, in making such hecatomb of the reproductive organs, you will soon have reduced to its minimum the population of the whole world."

Indeed—I do not deny it—abuses are committed. The study of new questions is always surrounded with danger, and it is very difficult never to make a false step. We must confess, also, that the impunity which antisepsis confers to operators sometimes conceals a certain number of unnecessary surgical procedures. But do these few unavoidable errors—and which certainly are to be deplored—entitle anybody to generalize and to render the prudent and enlightened surgeon liable to these undeserved reproaches? If a certain number of patients have been wrongly operated upon by surgeons in too great a hurry to resort to the knife, how much more numerous are not the women whom an untimely reserve on the part of the surgeon allows to die or to lead a miserable existence !

The accusation which is caressed with the greatest predilection

is that we mutilate women and render them sterile. In the greatest number of cases this argument is simply ridiculous. The suppression of the ovaries at an age where it constitutes a real sacrifice is inexcusable if it is not necessary ; but does the fact of operating upon women at the epoch of menopause or already mutilated by purulent or parenchymatous bilateral lesion render us worse citizens? To extirpate a uterus and not to find the alterations we had foreseen is always an error, but it is far from being a crime toward mankind ; and to add up the figures of several surgeons and exclaim, " What a number of women lost for reproduction !" is great ingenuousness, if not simply a bad joke. No ! I confess that we are exposed to commit some errors, but one must not exaggerate their frequency nor their importance. In every conflagration the fire claims its share. I do not pretend that in gynæcology, more than elsewhere, we have reached the ideal. I am quite willing to believe that the modern surgeon does not, properly speaking, solve the problems he meets with. In removing a diseased organ he cuts off the Gordian knot, instead of untying it ; but while waiting until the philosopher's stone has been found in pathology, you must admit that very often the surgeon is compelled to act radically ; and if some operators have compromised hysterectomy by indiscriminately resorting to it, a wise and intelligent intervention has rendered the most eminent services to humanity.

Hysterectomy is indicated against the diseases which threaten life or against those which render existence miserable by the perpetual sufferings which they cause to the patients. Among the former are cancer, pelvic suppuration, and the large tumors of the uterus. With regard to the malignant affections, no discussion ; there is no other hope than complete and early removal of the uterus. But here, general practitioners, you have an important *rôle* to play. It is upon you that, most of the time, depends the efficacy or the failure of the specialist's intervention. In fact, the indispensable condition of genuine success consists in an early operation. But it is not always an easy matter to diagnose uterine cancer at its beginning ; and how many women have been irremediably lost for having been tamponed, cauterized, and douched for pretended ulceration of the os !

Therefore, in all suspicious cases do not hesitate to have recourse to competent advice in the matter, and do not wait until a fœtid discharge, metrorrhagia, and pain have demonstrated that

you have lost precious time and that the life of your patient is fatally compromised.

I said that in extensive pelvic suppuration hysterectomy was also indicated. In order to render this proposition more acceptable, which perhaps you may deem exaggerated, I want to ask you, at first, of what utility may the uterus be to a woman when the appendages on either side have been destroyed? All the organs of the human body have their importance *in se*, it is true, but we must acknowledge that a great number of them lose all their usefulness when once they are deprived of the satellites with which they are conjoined. The uterus contains important blood vessels, it constitutes a considerable link in the lymphatic chain, it is situated on the road of the greatest reflex phenomena; anatomically, we must grant to it a primordial importance; but, you must admit all the same, that the old axiom "*Propter solum uterum mulier est id quod est*" has lost nowadays a good deal of its truthfulness, and the uterus deserves to occupy a place among the stars of great magnitude only owing to the physiological *rôle* that it is called upon to play in the functions of reproduction; and the consequence of this *rôle* fades away as soon as the organs of generation have lost partially or totally their integrity. Therefore, when once the appendages have been destroyed by disease or removed by the surgeon, to leave the uterus behind, under the pretence of doing conservative surgery, constitutes at least a grave imprudence when it is not an immediate peril. All the more when, besides the appendages, the uterus itself is diseased. And who can vouch for the integrity of the uterus in cases of pelvic suppuration? Is not the uterus the starting point of the pathological disorders in the majority of cases of pyosalpinx? The gonococcus, the ordinary agent of these lesions, deflours all it touches in an irreparable manner, and the uterus itself is not free from that law. The strength of this argument, which seems to me indisputable, is far from being universally recognized, however, and this question is, moreover, that which is most intensely disputed among gynæcologists. It has become the object of a sort of international discussion. This intellectual war has for its participants the Americans on one side and the French on the other, but each camp possesses adherents on the adverse side. Our grandchildren only, I suppose, will witness the general agreement, when time and experience shall have demonstrated wherein lies the truth. Waiting for the peremptory solution of this problem, if I am al-

lowed to give my humble opinion, I will confess that I rank entirely with those who seek to obtain definitive results in totally clearing away the pathological grounds, since the dangers of a radical operation are not any greater ; we are thus running the least risk possible to render doubtful the results of such a momentous interference as the removal of suppurated appendages.

With regard to the uterine tumors, I hasten to acknowledge that, exceptionally, a certain number of fibroids require absolutely no surgical operation whatever. But in the majority of cases, pain, metrorrhagias, symptoms of compression render life miserable when they do not compromise even its existence. It is a well-recognized fact to-day that these cases generally require hysterectomy ; palliative treatment, such as ergot, ergotine, etc., now totally belongs to the past. The same may be said about these half measures, which might have been advisable at a time where operative technique was still defective, but which nowadays cause the surgeon to lose most precious time and often constitute a real danger. I mean electricity and ovarian castration. These last procedures may at the most be of some utility when the tumor is intimately embedded in the uterine tissue, where it might call an exaggerated flux of blood, as well as produce considerable pain. Any therapeutic agent liable to modify the circulation and nutrition of the uterine walls might have some influence upon these neoplasms, by the suppression of periodical congestions due to menstruation for example ; but it is useless to think of imparting any modification to those fibrous bodies almost enucleated, growing at the periphery of the uterus, provided with slow circulation and almost independent of the physiological phenomena which take place in the uterine walls. Besides, this sort of virtuosoship in the diagnosis of these anatomical conditions is generally out of the question ; and my own experience has taught me that temporization with fibroids of the uterus is always hazardous ; surgical action sooner or later becomes imperiously necessary, and an operation, easy a few months sooner, might be exceedingly grave when, later on, hæmorrhages shall have exhausted the patient or, after repeated attacks of pelvic peritonitis have snugly fastened the neoplasm to the surrounding parts.

Outside of pelvic suppuration and uterine tumors which threaten the patient's life, we have also recourse to hysterectomy in order to put an end to sufferings which, although not compromising existence, yet render it miserable and often unbearable. In this

category are included incoercible metrorrhagias, old parenchymatous metritis, epilepsy, hysteria, and, above all, pelvic neuralgias. Out of this enumeration, I want to make some restriction, however, concerning epilepsy, hysteria, and neurasthenia, against which hysterectomy has not been followed with as brilliant results as were expected. Nervous women constitute the opprobrium of great surgical procedures, and it is in the treatment of these varied pathological disorders that the gynæcologist is compelled to lay aside his specialist's spectacles and to call upon his knowledge of general pathology. Much tact and experience is required to seize the true nature of these deceptive grounds, and it is here, more than ever, that we must not treat a *disease*, but a *patient*, because therapeutic results vary from one organism to the other even when the same local indication is fulfilled. This reserve being made, it is nevertheless a known fact that hysterectomy has to its credit remarkable and definitive cures, even when no material lesions whatever could have been detected in patients tormented by unmerciful neuroses or almost unbearable pelvic neuralgias. Naturally in these cases the opportunity of so serious an operation is quite opened to discussion ; still we must not disclaim all value to facts the evidence of which very often upset the most specious arguments. To arrive at a practical conclusion, a patient being given with whom, as it so often occurs, everything has failed, a woman who for years has been gorged with cod liver oil, iron, hydrotherapy, and all sorts of antispasmodics, especially if her poverty does not allow her to continue these therapeutic measures, as ruinous as they are sterile, I would not hesitate a moment to take the knife and suppress at once what the experience of others has taught me to be in many cases the source of all evil.

What are the conditions required for all hysterectomy to be successful? Here, gentlemen, I will be short ; these conditions, you know them all. They are those which are in conformity with the exigencies of modern surgery. To obtain perfect results (and such must be the aim of every surgeon) it is necessary to operate in a special establishment situated in irreproachable hygienic conditions and under the superintendence of intelligent and well-trained nurses. I am well aware of the fact that many operators do not hesitate to do these operations at the patient's own house ; but if they can do otherwise they are wrong, in my humble opinion, not to put all the chances on their side. I know by experi-

ence the detestable consequences of a defective service, and any amount of good will does not suffice to give the patient the security she is entitled to. I practised abdominal surgery both in more or less well-equipped hospitals and in a private establishment. I will spare you the annoyance of listening to statistics, but suffice it to say that I never experienced in my private institution the deceptions I so often met with in the hospital. No, it is useless to delude ourselves, the perfection of the surgeon's work itself is not the only condition of success ; quite as important is the necessity of confiding the patient operated upon to a learned nurse, who, as it were, is the surgeon's lieutenant. In my opinion the ideal in the healing art should be for the surgeon to have but a single patient and to remain with him all the time. This is impossible, as you easily understand ; then teach your nurses, see that they are as interested as yourself in your work, in your apprehensions, in your hopes ; let them strive as much as you do to achieve the good results you are wishing for ; let that strenuous coadjutor constantly watch at the bedside of the patient ; impress upon her the necessity of faithfully recording all that you must necessarily know, and you may be sure beforehand that all your orders will be scrupulously fulfilled.

And what about the tools required for the operation ? Nothing should be spared to be supplied with the most perfect instruments possible. I do not mean that a complicated armamentarium is indispensable ; simplicity everywhere is a virtue ; but one must have all that is necessary at his disposal and never be caught unawares. It is simply absurd to voluntarily create difficulties in the performance of an operation in the course of which so many unforeseen accidents may arise.

Thirdly, we must be aseptic. Here is, though, a *sine qua non* condition. Call it asepsis, antisepsis, or otherwise, we must be scrupulously, surgically, absolutely clean. The precautions which must be taken to be considered irreproachable and complete require quite a long experience, but when once these habits are acquired, there is nothing difficult or complicated in it, everything is instinctively done without the least omission and naturally.

At last, gentlemen, in order to succeed in this operation, which may seem to you quite easy when you see it performed by a skilful surgeon, but which is surrounded with the greatest difficulties for whomever attempts to do it for the first time, it is indispensable to possess perfect anatomical knowledge, and to have

acquired by study and practice a thorough surgical experience. It is necessary to have frequented the large hospitals, to have seen the masters at work, to keep stored in some corner of the memory the varied methods peculiar to each operator in order to possess multiple resources to overcome unforeseen difficulties. He who, knife in hand, ventures in the abdomen of a woman without having tried to obtain the qualities necessary to perform an operation of that kind, is, to my mind, a very guilty one. He holds in his hands the patient's life ; and if by chance death does not follow the operation, it will perhaps be at the expense of an irreparable infirmity. It does not suffice to go through the work and not kill the patient, one must besides relieve her sufferings, or at least not leave her in a worse situation than before, "*primo non nocere.*"

Will you allow me to tell you now what results we obtain by hysterectomy? What are, at first, the immediate and then the remote results of the operation? With regard to the immediate results, we must again make a distinction according as the cases for which we operate are complicated or not. The results which follow non-complicated cases are simply astonishing. We can say that here we may expect to hit the mark in almost every case ; mortality should be null ; one hundred per cent. of success ought to be the statistics of every gynæcologist. The only, or the greatest danger, is septicæmia. I am well aware that, owing to the aseptic and antiseptic means at our disposal, we can in the majority of cases prevent this deadly complication ; but, unfortunately, it is not always possible to be sure that a stealthy streptococcus has not found its way to the field of operation, which it immediately contaminates by its presence. The shock, according to several gynæcologists, would not be anything else but the result of septic accidents.

With regard to hæmorrhage, it is always due to faulty technique on the part of the operator, to the imperfection of the instruments, to the bad qualities of the materials employed, and must not be put to the account of the operation itself. In surrounding himself with necessary precautions the surgeon ought to be in a position to avoid these dangers.

But all cases are not so simple, and certain complications determine more or less satisfactory results according to their nature. Thus, in hysterectomy for cancer of the uterus, the risk of contamination is always imminent. And again in pelvic suppura-

tion, it is impossible to know beforehand the virulence of the pus it contains. Septic peritonitis in the latter cases is always to be dreaded, especially when the operation is performed through the abdomen. The more or less abundance of the collection is here but of a secondary importance; and it has happened to me, as well as to other surgeons, to see the peritoneal cavity literally flooded with pus without any notable following elevation of temperature, whereas very often the mere contact of the peritonæum with a tube hardly containing a few drops of pus has sufficed to determine rapidly fatal accidents. The microscope has given us the solution of these apparently paradoxical phenomena, and we are well aware to-day that the old purulent collections are often entirely sterile, whereas recent acute abscesses contain an extremely septic pus. The situation, the character, and the extent of anatomical lesions also very often aggravate the immediate prognosis of hysterectomy. Thus, during the removal of a fibroid, we often meet with general or partial adhesions to the peritonæum, to the bowels or the bladder; and again, in pelvic suppuration the appendages are often blended together, forming but a vast sac the walls of which adhere everywhere to the surrounding parts, especially to the rectum; and they have, as it were, to be sculptured out of their nest. The handling inflicted to the intestines, added to anæsthesia, always prolonged in these cases, is very often followed by regrettable if not fatal consequences. In spite of all these unfavorable conditions, the general statistics prove to be absolutely encouraging, since hysterectomy shows but a mortality of twelve to fifteen per cent. in these complicated cases, which, left to themselves, would sooner or later surely end in the death of the patient.

Let us see now the remote results obtained by hysterectomy. These results are physiological and therapeutical. The consideration of the former will allow my doing justice, in a few words, to the objections made to the operation by those whom I will call the abstemious surgeons. What are these objections? "You emasculate women," they say. "You render impossible all further fecundation." I already refuted this argument above, begging of you to remember that the women upon whom we are doing hysterectomy are almost always sterile by the mere fact of the pathological lesions for which they seek relief.

"You modify their humor, you change their character." Yes, by all means; but the patients are not the losers by it, because,

by putting an end to their sufferings, we have removed the thorn which constantly irritated their nervous system and rendered them unbearable to themselves and to every one around.

"You abolish all genital feelings, and you create in them a sexual frigidity which often destroys all conjugal felicity, and consequently becomes the frequent cause of domestic unhappiness." To this gratuitous assertion I oppose the most energetic denial. Contrarily to this erroneous idea, too generally spread and even propagated by some text-books of physiology, the experience of many observers, as well as my own, has taught me that sexual appetite by no means resides exclusively in the internal genital organs. Women endowed with ardent temperament keep it after hysterectomy, and, moreover, in certain cases it becomes exaggerated. I am even acquainted with a woman who never experienced any conjugal emotions until after the removal of her uterus and her ovaries.

"You prematurely hasten menopause, with all the disagreeable symptoms that accompany it." This I do not deny; after hysterectomy we must expect the majority of women to complain of headaches, hot flushes to the face, etc., symptoms generally relieved, though, by blood-letting or a few doses of bromides, and which, at all events, spontaneously disappear after a few months. But what are these inconveniences, after all, but natural, compared to the previous dangers and sufferings? With regard to these vicarious manifestations, it is not without interest to remark that Richelot and Segond have observed that their frequence and intensity are a great deal less after total castration than following simple oöphorectomy.

What therapeutical results do we obtain by hysterectomy?

Here it is that triumph is resplendent upon the whole line!

In cancer of the womb, if the operation has been done early, we add two, three, four, and even eight years to the life of the patient. After the removal of the uterine tumors all sufferings vanish as if by enchantment; metrorrhagias ceasing, anæmia disappears, the woman revives and regains her youthful appearance. Same results after hysterectomy for parenchymatous metritis and pelvic suppuration. Nothing is so consoling, in that respect, as to peruse in detail the numerous observations published by the French hysterectomists. The patients, seen again several years after their operation, continue to feel marvellously well, and they all express their satisfaction with the same words; they emphati-

cally declare never to have enjoyed more perfect health. I could not say as much concerning the other pathological disorders which might have determined the surgeon to remove the uterus—I mean the great neuroses and pelvic neuralgias without anatomical lesions. I cannot but repeat here the restriction I made above, calling again your attention, however, to the very consoling hopes which the cases published by Richelot allow us to conceive, and in which this surgeon has observed the most encouraging and permanent results.

What is the best way to remove the uterus? Which way shall we choose, the abdomen or the vagina? This is where the discussion warms up, and contradictory arguments pour in right and left. The Americans stick fast to laparotomy, and surely they perform that operation in such a clever manner, they obtain such brilliant results that they are undoubtedly altogether justified in fighting for their opinion. The French, on the other hand, would rather operate through the vagina; and again, at their turn, they have become so expert that we feel in duty bound to grant the concessions they claim. It is needless to add that I declare myself entirely incompetent to peremptorily decide the question. Besides, the discussion is actually in all its vigor, the periodical reviews abound in articles on this subject. However, it seems to me that they only debate without progressing. Both methods are perfectly acceptable, and one does not exclude the other; they both answer special indications according to cases. The discussion, properly speaking, does not dwell on the best way of removing the uterus, and the problem would soon be solved if it were put in these terms: "It is necessary to extirpate the uterus; which way shall we do it?" The more or less great difficulty of one method over the other must not be exclusively taken into consideration. The skilful surgeon must be in a position to equally well operate by both ways, abdominal or vaginal, whatever may be the hardship he is liable to encounter by one or the other procedure. The important point is to minimize the risks with regard to the patient and to choose the method which will yield the best results in a given case. As far as the difficulties are concerned, I believe them to be even on both sides, and the inconveniences of either method are equally compensated by advantages. The objections offered by the adversaries are actually puerile. "Do not operate through the abdomen," say the vaginists, "on account of the ugly scar that the operation leaves on the abdominal walls."

But that scar, who will see it? Society will never permit the women to dress low enough to show that they have been operated upon, and the most interested one in the whole business shall certainly find to the knowledge of this slight imperfection an ample compensation in the privileges granted to him alone.

And what about the consecutive hernia? Of a very unlikely occurrence if the sutures of the abdominal walls are carefully and methodically made.

"Operate through the abdomen," shall the laparotomists say in their turn. "You are risking less to wound the bladder, the ureters, and the rectum." Indeed! Is it so difficult to learn perfectly the technique of vaginal hysterectomy and to avoid these elementary errors?

In one word, is the question to remove the uterus merely and simply in a case devoid of all complications; choose the way you like, the difficulties and the advantages are equal on both sides. But where the discussion becomes important is in the treatment of tumors or pelvic suppuration. I pass over silently the cancerous uterus which some operators seem to have a tendency of late to remove by the abdomen as advised by Polk, Kelly, and Pryor; observations on this subject are too few to allow our forming an opinion one way or the other. But with regard to the fibrous or other uterine tumors, the size of the growth constitutes the important point. However, even for small tumors, and whatever may be the results claimed by the vaginists, I frankly confess my predilection for the abdominal route. The dangers of the operation are hardly more considerable; and to a surgeon used to operate both ways, abdominal hysterectomy will require less time to be performed than the morcellation of the tumor by the vagina.

But when we have to deal with pelvic suppuration there the trouble begins. The question here is no more to know which is best way to remove the uterus; on the contrary, gynæcologists are divided in two camps, exactly like our politicians; we have the conservatives and the liberals. Which is the best policy? To open the abdomen, evacuate the purulent collections, remove the diseased appendages, and leave the uterus in its place? Such is the opinion of the laparotomists—the conservatives. Or is it more advantageous to burst open the vagina, allow the pus to flow out, extirpate by that route the purulent sacs and sacrifice in the mean time the uterus, as advocated by the vaginal hysterectomists—the liberals? I know that a certain number of gynæcologists

exists who, in every case of pelvic suppuration, believe in the necessity of always removing the uterus with the appendages, and who prefer doing the operation by the abdomen rather than by the vagina. These I deem to be absolutely wrong ; they jeopardize without great advantages the life of the patients. But the other laparotomists, are they right ? Those, for instance, who claim that the abdomen should be cut open, the adhesions separated, the purulent sacs removed, but the uterus left *in situ ?* " It is not diseased," they say ; " it does no harm ; and this," they add, " cannot be done when the purulent collections are treated through the vagina, because when once engaged that way the surgeon must go to the end and remove the uterus, which procedure is a useless mutilation." They contend, moreover, that the purulent sacs themselves cannot be entirely extirpated in many cases, owing to the operator being unable to see what he is doing, whereas, with the Trendelenberg position, the laparotomist operates all the time under the control of sight.

To this the vaginal hysterectomists answer thus : " If you leave the uterus behind after having removed the appendages destroyed by suppuration, you do an incomplete operation, and you are exposing your patient to further sufferings, as the fact has often been demonstrated by patients upon whom we have been compelled to perform a secondary vaginal hysterectomy to relieve the symptoms, which continued in spite of the laparotomy they had undergone ;" and again, they add, " You are mistaken in pretending that we are doing blind work in operating by the vagina ; in the majority of cases, owing to certain artifices of technique, we see very well what we are doing. It occurs, it is true, in certain cases, that we cannot succeed in extirpating everything ; but does not the same thing happen the laparotomist who many times has failed also to remove diseased tissues held on by adhesions which it would have been impossible and dangerous to sever entirely ? And in both cases these operations that you call incomplete do nevertheless end in total cure, the appendages becoming atrophied later on and the patient ceasing to complain. At last vaginal hysterectomy opens to the pus a dependent issue, and the risks of contaminating the peritonæum are consequently a great deal less than the removal of purulent appendages without hysterectomy by the abdomen."

You see, gentlemen, the principal point in contest is the following : must we, or must we not extirpate the uterus when we are

compelled to remove the appendages destroyed by suppuration? The day that all gynæcologists shall become convinced that, in these cases, the uterus even sound ceases to have any reason to exist; that it even constitutes oftentimes a menace for the future, and that its removal is not a useless mutilation, that day we shall be very near understanding one another, and, to speak my mind, vaginal hysterectomy shall come then victorious out of the struggle and be considered by the greatest number as the choice operation in pelvic suppuration.

Gentlemen, since I have chosen hysterectomy for the subject of my paper, may I be allowed, in terminating, to detach from my observations three cases of removal of the uterus which presented rare and unforeseen morbid phenomena, and whose brief report might offer some interest with regard to general surgery?

The first is that of a woman, aged forty, exceedingly nervous, on whom I extirpated by the abdomen the uterus containing a large fibroid. The operation, rather prolonged, owing to the numerous adhesions contracted by the tumor, nevertheless offered nothing very remarkable. It was followed by no unusual symptoms, with the exception of an extreme tachycardia, against which all the means at my disposal remained useless. The very day of the operation the pulse reached 160 to 180 pulsations a minute. There was no symptom whatever of valvular affection, and previously to the operation the pulse beat normally. During four weeks I kept the patient under careful observation; never did the pulse go down below 115, oscillating ordinarily between 120, 130, and 140 pulsations. Caffeine, strychnine, sparteine, digitaline, bromides, cinchona, nitro-glycerine, all remained ineffectual. I had performed hysterectomy with extra-peritoneal pedicle, according to Baer's method; I made afterward several vaginal examinations, and never could I detect the least alteration which might have given the explanation of this curious pathological symptom. This post-operative tachycardia is not the first one that I have observed in the course of my practice, and some years ago I communicated a somewhat similar case to one of the meetings of the Bathurst and Rideau medical association. It was the case of a woman upon whom I had performed unilateral oöphorectomy for a cystic ovary of the right side. During the first two days that followed the operation the pulse constantly beat 140, 160, 180 times per minute, the patient offering in the mean time other symptoms

of an evidently nervous character. But these accidents spontaneously disappeared at the end of forty-eight hours, whereas they still persisted with the other woman the day she left the hospital. I saw the last patient since ; she feels well, she is gradually regaining her strength, sleeps and eats well, but the pulse is still frequent, although slower than it was during her sojourn in the hospital. The last time I saw her in her own house the pulse beat 100, it was intermittent, weak, and irregular. She said she had noticed lately quite a considerable œdema of the inferior limbs, but a few purgatives got rid of those dropsical symptoms.

The other patient, aged forty-five, unmarried, had equally undergone an abdominal hysterectomy for uterine fibroid. The operation was easy. The wound healed up by first intention, and the sutures were removed on the twelfth day. On the fifteenth day, without any appreciable cause, she complained of violent headache, which was somewhat relieved by antikamnia. During the night she was suddenly seized with right hæmiplegia and aphasia ; she died in two days. This unfortunate cerebral complication was evidently due to embolism, exceedingly rare accident, but which has been signalled by some observers as occurring sometimes after great surgical traumatism of the abdomen.

The third case, at last, is that of a woman from whom I removed by the vagina an enormously large uterus for parenchymatous metritis. Here, again, the operation was exceptionally easy and rapidly done. This woman, a mother of several children, three years previously had had uræmic convulsions at the end of pregnancy. As usual, the eve of the operation the urine was examined and proved to contain no trace of albumen whatever. Besides, with the exception of the symptoms due to her uterine affection, and for which she was seeking a surgical intervention, this patient appeared to be in perfect health. Anæsthesia was produced by ether with Clover's inhaler, according to my habit. Was this agent the cause of what happened after the operation ? I believe it was. At all events, from the time she was put into her bed the kidneys were stricken with a total inhibition of their functions, and during fifty-six hours she hardly passed a few drops of urine. And still neither the bladder nor the ureters had been wounded during the operation. Before she was taken from the operating table, two ounces of urine had been withdrawn by the catheter. During almost three days the general state was exceedingly alarming, the vomiting incessant, and the facial expression

very bad. The clamps were removed forty-eight hours after the operation with no improvement of the symptoms. About six o'clock at the end of the third day the nurse announced to me that the bed was wet with a liquid which she thought had the odor of urine. I ordered the catheter to be applied, and two ounces of urine were taken from the bladder. Three hours afterward four ounces were again withdrawn, and then the urinary secretion became normal, the patient spontaneously voiding from thirty to forty ounces within twenty-four hours. Although no albumen was detected before the operation, it is difficult not to see in this formerly eclamptic woman the effect of ether upon the kidneys, evidently still laboring under some morbid predisposition, owing to probable previous alterations of their structure.

A CASE OF BEGINNING TUBERCULOSIS OF THE MESENTERIC LYMPH GLANDS REVEALED BY AN EXPLORATORY CŒLIOTOMY.*

By Reuben Peterson, M.D., Grand Rapids, Mich.

The interesting features of this case and the various questions to which it gives rise have led me to report it this evening.

The patient is a delicate child eleven years old. The family history is markedly tubercular, three paternal aunts and one paternal uncle having died of phthisis. One maternal aunt also died at an early age of an acute form of the disease. While the parents have never manifested any tubercular symptoms, they are people of weak constitutions and have little power of resistance. The elder sister, a girl of eighteen, has been an invalid for the past two years. She is now developing a cough, with scanty expectoration, though physical examination fails to reveal any localized tubercular process. Last May I saw in consultation another sister, aged twelve, who was in the last stages of general tuberculosis. This little patient had had abdominal pain for over six years of such severity as to interfere with her studies and play. The abdominal symptoms became more marked three months before death. Ascites and general infection followed. Some few weeks after her death I was asked to see the present patient, whom the

* Read before the Chicago Gynæcological Society, January 15, 1897.

family were positive was developing the same symptoms which had proved fatal in her sister's case. A most careful examination failed to reveal any localized tubercular process. The prominent symptoms were indefinite abdominal pain, a troublesome nausea, and general malaise. There had never been any irregularity of the bowels. Tonic treatment proved of little avail except in remedying the marked anæmic condition of the patient. January 11 I saw her again after an interval of several months. I found upon examination a localized tenderness over an area as large as the palm of the hand situated two inches to the right and an inch above the umbilicus. Otherwise the examination was negative. The general appearance had changed but little. The nausea was more marked and was accompanied with a constant desire for food, but at times complete inability to swallow it.

The family was advised that the localized abdominal tenderness was probably due to a tubercular process of some kind, and an exploratory cœliotomy was urged. This was performed at Butterworth Hospital three days later. An inch and a half incision was made in the median line midway between the pubes and umbilicus. The exploring finger carried to the site of the abdominal tenderness detected a chain of enlarged glands in the mesentery of the small intestine. These glands averaged 1½ cm. long by 1 cm. wide. They were freely movable underneath the peritonæum. A small loop of gut, together with the mesentery, was brought outside and one of the glands removed for microscopical examination and the peritoneal incision brought together by fine catgut. The enlarged glands were distributed throughout the mesentery, but nowhere were they in such numbers as at the place just described. The intestines looked normal, as also did the appendix. The following is the report of the hospital's pathologist, Dr. J. B. Whinery:

Report of Dr. Whinery.

Enlarged gland from the mesentery, hardened in absolute alcohol and imbedded in paraffin. Cut sections stained for tubercle bacilli. "Carbol Fuchsin method." Examination negative. Sections stained with lithium carmine and picric acid, showed proliferation of glandular tissue, occasional groups of cells, probably of early tubercular formation. Giant cells absent. No caseation or breaking down of tissue.

The ultimate result of this case is of course problematical. It remains to be seen whether the opening of the peritoneal cavity in the early stages of mesenteric tuberculosis will have any appreciable effect upon the progress of the disease. That this same procedure has accomplished most remarkable cures in peritoneal tuberculosis is beyond question, yet why this happens is still far from being satisfactorily explained. Some six years ago I assisted in making an exploratory cœliotomy on a woman for an obscure abdominal trouble. The mesenteric glands were found universally enlarged, although unfortunately none were removed for subsequent examination. The case was thought to be tubercular, and an unfavorable prognosis given. The woman is alive and well to-day, having since given birth to a healthy child. The similarity in the two cases leads me to think that possibly under the proper treatment the present case may also eventually recover.

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EDITORIAL.

THE ABUSE OF HOSPITALS AND DISPENSARIES.

In a recent number of *The Medical News* of New York appeared an able editorial upon this ever-pertinent subject. The writer dealt especially with the constant professional protest against the injustice of the now-a-day dispensary practice and, while carefully avoiding an expression of personal opinion on the subject—which we regret—endeavored to suggest a practical method of minimizing the effects of this medical vice. For avarice, with its selfishness and injustice, is the most meanly and hopelessly vicious of all our vices. The editorial in question, while a tentative step in the right direction, was too narrow in its scope, too fearful of falling *in mediæ res*, too cautious lest it appear to "take sides" in a simple question of right and wrong.

The question is one more than once discussed in this JOURNAL and concerns the encouragement of pauperism, of lying and of trickery; charity squandered upon the parsimonious well-to-do and the consequent deterring of the truly indigent in our hospitals and dispensaries. This system prostitutes the very name of

charity and is the most potent factor in the demoralization of our younger professional brethren.

It is the scandal of our cities that at the best-known hospitals and clinics, public and quasi-public, many patients are in constant attendance, receiving free medical or surgical treatment, who are notoriously capable of paying a reasonable fee. It is perhaps too much to expect from the selfishness of ordinary human nature that the governors or managers of such institutions would take the initiative and put a stop to this flagrant abuse by compelling these parasites, especially women, to seek treatment at doctors' offices, where they would be obliged to pay for medical attendance. It is, however, an astonishing thing that this practice continues with not only the connivance but even the encouragement of hospital medical attendants and the heads of clinics, for the sake of the "material" they would otherwise lose. These men, by their very positions, are well up on the ladder of success, and can afford to dispense with a few fees for the sake of what they consider are the larger gains of personal operative statistics. But this is not the case with their often equally well-endowed though struggling professional brethren who are "outside." We all know that the early years of the average practitioner are full of heartsick disappointments and weary waiting—often despair and even starvation stalk as his shadow as he struggles into a practice. Yet his successful professional brother, whose memory of his own early struggles should induce to encourage and assist, in sheer wantonness steals the patients upon whom the less fortunate one depends for his daily bread. If the life of a beginner in medicine is a hard one—and God knows how hard it frequently is—it is not the unappreciativeness of patients which makes it so, but the selfishness and callous indifference of other doctors.

We do not deal, in speaking thus, in "heroics;" the subject is one, in our opinion, in regard to which no language can be inappropriately strong. It is because we ourselves belong to the "favored class" of hospital appointees that we can speak so positively about this abuse which we condemn, without danger of the accusation of either exaggeration or prejudice.

The editorial in *The Medical News* offers as a practical suggestion in regard to dispensaries (which is the only phase of the abuse to which it refers) that an effort be made to stop public or private aid to these institutions, and in this way compel them to derive their entire support from the patients who attend. This plan,

doubtless, might succeed in restoring self-respect to a class of patients who, we fear, would hardly know what to do with it if it were restored, but it would not affect the lot of the "outside" practitioner which is daily becoming more and more precarious.

We will ourselves suggest a remedy—not only a practical one but the only one, we believe, which will ever succeed—*the force of public opinion.* It is to medical journalism the profession must look for a united, honest and decided crusade against this evil. But united action upon any subject by the medical press of this country is a dream still to materialize. Many old habits must first be thrown aside and forgotten. We must be less careful in weighing the possibility of giving offence to a few subscribers against the justice of a good cause; we must be glad to follow the lead of a contemporary in the right direction when the opportunity offers and forget that this love of the truth may advertise our neighbor and not directly increase our own subscription-list. It is a foolish policy, for it is only by giving credit to others that we will have credit given to us. It is again a foolish policy to fear to give offence by maintaining a just cause. It is to the credit of human nature that even the wicked admire virtue and even those who, owing to personal interests, oppose us, are disarmed by the weakness of their cause. All these things must medical journalism forget or remember. In other words, it must not be a merely mercantile pursuit but a profession.

We welcomed the editorial in *The Medical News*, and sincerely hope it will not let this subject drop, but will pursue it further and with vigor. It is to be hoped that its example will be followed by the more influential journals throughout the country—and especially in the East—when the success of its cause will be assured.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, January 7, 1897.

The *President*, E. E. Montgomery, M.D., in the Chair.

Plastic Surgery.

Dr. Joseph Price made the following remarks: Both the subjects to be presented and discussed later are closely related to many experiences I have recently had or new ones I am about to have; for instance, successful perineal operations. I have now a patient who has had two attempts at the closure of a sphincter tear, both perfect and absolute failures; another, coming on the same day, had two attempts made at the closure of a vesico-vaginal fistula in a primipara, neglected in labor and perhaps concealed throughout the early stages of labor. Two attempts at closure of fistula were failures. They are both interesting from the point of view that plastic surgery has been greatly neglected. These patients have had two operations without even diminishing, in the case of the fistula, the calibre of the fistula, and giving really more scar tissue than probably primarily existed. The presence of scar tissue and the loss of tissue in the complete sphincter tear is also an additional complication in regard to perfect cure. Only recently an editorial in one of the New York journals alludes to statements commonly made that "*we have tried and we have failed;*" this amused me when I examined these two patients. I refer to the sphincter tear; one has a complete destruction of structures involved in injuries to the pelvic floor. These are unique cases from the point of view that plastic surgery is almost a lost art. I remember a few years ago, when the enthusiasm of abdominal surgery was so great, and I had a pupil write a paper which he prefaced "Plastic Surgery a Lost Art," and I have been impressed more and more with the fact that it is becoming really a lost art.

Clinical Report of One Year's Obstetric Work at the Preston Retreat.

By Richard C. Norris, M.D.

(See page 253.)

Discussion.

Dr. Norris: I should like some one to take part in the discussion of douches before and after labor. A great many obstetricians have done away with their use, feeling that they do more harm than good. And indeed it is a question in mind whether I should hold on to this practice after the principle "hold fast to that which is good until you find it is evil."

Dr. Charles P. Noble: Obstetrical subjects are always of general interest, and this report of Dr. Norris's brings up so many points that the difficulty is to select those for discussion. The first point which struck me was the question of the condition of the patient after post-partum hæmorrhage and the condition of some of the other patients after eclampsia. In speaking of the treatment of these conditions, Dr. Norris made no mention of the large use of water. I have been very much gratified in my own work with the effect of large amounts of water introduced into the economy, whether by the stomach, bowel, under the skin, or into the veins in these conditions, particularly in loss of blood. I read recently the statement by Dr. McBurney in the jubilee that was held in Boston upon the semi-centennial of the discovery of ether, that surgery had now arrived at a point where no one needed to die of hæmorrhage because we could introduce enough fluid into the body to keep them alive. That probably was an extreme way of expressing the great value which the introduction of normal salt solution into the economy has come to occupy. While I do not know that I would take such an extreme position as to its value, I do think there is nothing which is of greater value than the introduction of a normal saline solution. Certainly in the case of aggravated post-partum hæmorrhage I think this would be of the greatest importance. The simplest way to use it is to introduce it into the colon, and if that were not convenient, it can be very readily put under [behind] the breasts of a woman. I have never done it in a case that has just been delivered. The question would come up whether it would not interfere with lactation; if

so, it could be readily put under the shoulder-blades or into the veins. I would strongly recommend in all such cases of exsanguination that the saline solution be tried.

Some years ago I saw a case that had violent eclampsia with Dr. M. B. Miller. Dr. Miller had had quite an experience at that time in an insane asylum, and being accustomed to feed patients through a stomach-tube, it occurred to him to treat eclampsia by introducing fluid through the stomach-tube, through which he repeatedly introduced large amounts of water with very satisfactory results. I am sure, in the treatment of eclampsia, the introduction of large quantities would be of great value no matter how you put the water in. I am sure it cannot help but be of great value in this condition.

The case of placenta prævia, I think, was treated most admirably; and it seems to me that the treatment of placenta prævia is no longer an open question. Delivery should be effected as soon as "diagnosis is made." Version by the bipolar method of Braxton Hicks, as shown by Lomer, or partial separation of the lower attachment of the placenta according to Barnes and Murphy, followed by bipolar version in bad cases, or by leaving the case to nature in simple cases, has rendered the treatment of placenta prævia most satisfactory. These methods, promptly carried out under asepsis, will give almost a *nil* mortality.

I feel very much as Dr. Norris does about the question of the applicability of strict laboratory work to clinical medicine, namely, it is so possible that all conditions that prevail in clinical work do not prevail in laboratory work that the direct transmission of one field to the other is very liable not to give direct results; so that we must look upon these investigations as advisory and suggestive rather than conclusive; and where one has had such admirable results as the report by Norris indicates have been obtained in the Preston Retreat, I think this proves he is following the right course.

As to the ante-partum douche, I have said on a number of occasions the best time to use it is long before the woman falls in labor. To put the matter in another way, it is the business of the practitioner, when he is engaged to attend a woman in labor, to find out whether she has healthy genitalia; and six weeks or two months before labor he should make such inquiries to know whether she has a puriform vaginal discharge, and he should use local treatment to cure her gonorrhœa or vaginitis before she falls

in labor. If, however, he does not see her until she falls in labor, if I were in charge of an obstetrical institution I should certainly use it, unless one had such admirable laboratory facilities that the vaginal secretions of every woman could be examined by competent, thoroughly reliable bacteriological investigators. Then, if no pathogenic germs were found in the vagina, there would be no occasion for douching. Certainly where institutions have no such facilities I think ante partum douches should be used. In private practice, with healthy genitalia ante-partum douches are not called for. I should like to ask whether craniotomy was done upon a living baby.

Dr. Norris : No ; the child was dead.

Dr. G. M. Boyd : I enjoyed Dr. Norris's paper very much, and I see the good work of the Preston Retreat has continued, and that the average mortality of one half of 1 per cent., which I think is about the mortality of the modern institution, is even less in that institution. We had five deaths in our first one thousand cases at the Philadelphia Lying-in Charity (in my connection with the institution) and six or seven in the second thousand. The Sloane Maternity reported eight deaths in the first one thousand cases. I believe, though, the mortality of a maternity depends very much upon the work done, as I have stated before, whether or not you are a teaching institution or whether or not you have the privilege of (to a certain extent) selecting your cases—if you are centrally located and ready to receive emergency cases or not. Many of these cases will present themselves under unfavorable conditions, and the maternity mortality will be greater, so also the infant mortality. It is the rule of the Lying-in Charity to give each patient an ante-partum bichloride douche, and post-partum douching is also carried out irregularly, but it is frequently resorted to.

I am very glad to hear Dr. Norris allude to the fact that infection of the perinæum and vagina often exists, and that the attention of the practitioner should be called to that fact. Very often the uterus is irrigated when the infection exists in the perinæum or in some laceration of the vagina or cervix. Some time ago I reported a case to the Society, one of puerperal pelvic cellulitis, which I followed closely, and which I was sure had developed from an infection of the cervix and vagina ; the uterus was not involved ; and in that paper I divided the birth canal into three portions : the perinæum ; the second portion from the perinæum, including the cervix ; and the third, the body of the uterus. We

should find out, if possible, definitely the source of the infection. I think the explanation of the elevation of temperature in a maternity, and where cleanly work is carried out, is frequently an infection due to laceration of the perinæum or some portion of the vagina, and it is a wound infection, an infection in which the uterus is uninvolved, an infection which yields promptly to local treatment and careful douching.

Dr. Joseph Price: Dr. Boyd's allusion to the mortality in teaching institutions I think is an error. The Sloane is really a teaching institution; it belongs to a school largely organized for that purpose. My experience in public work differs entirely from Dr. Boyd's; for instance, the mortality in the Philadelphia Dispensary always stands below 1 per cent.; we usually lose one case (not seven or eight) in 1000, notwithstanding 104 pupils do this work yearly week after week, with a number of assistants or aids. When they fail to call or find one of three or four assistants they call in nearby physicians, and I notice death occurs in one of these cases, when some one comes in in a loose, indifferent way, terminates labor, smiles at the student and leaves. This has recently occurred, and I questioned the student, when relating the case to me, as to whether the man he had called in had observed precautions in his own toilet, without asking any names, and he assured me that he had not. Whether the student was capable of judging I am not prepared to say; but my own experience for a number of years in a teaching institution (and I allude to this simply to emphasize the reference Dr. Norris has made to the ante- and post-partum toilets) is that in just these institutions that follow the most careful cleanly practices they have the lowest mortality. The Retreat has taught more practical obstetrics in the last fifteen years than any institution I have any knowledge of. It has given the profession the world over an object lesson. While the Retreat is far from being an ideal institution, if I owned it I would eviscerate it to-morrow; it is an old and decomposing institution. The very sills and floors are decomposing. I remember very well when I took charge of it the windows, the framework, the joists had to be repaired to hold it together. It is an enormous institution, and would require many thousand dollars to put it into an ideal condition. Notwithstanding these facts, when first constructed it was used for a long period for a Children's Home. When first opened for a maternity there was a series of 250 deliveries or more without a maternal death. That at that time was an

immense series of cases. It was the only institution without mortality at that time, and later, after the adoption of the gospel of cleanliness and post-partum and ante-partum douching and toilets, nothing could be more gratifying, nothing could fortify our position more than these facts, and you will find it true all over the country, as soon as some laxness occurs in practical maternity work the mortality runs up. When maternity work happens to be under discussion in societies throughout the world the mortality is low or *nil*. The hospital mortality always seemed to be low when such records were under discussion ; but just as soon as puerperal sepsis and extirpation of the uterus curettement or drainage comes under discussion then everybody has a great many cases and deaths to report ; surely some of these deaths must have occurred in the maternities because something is evidently wrong. Every wound throughout the course from the placental site to the outlet is a surgical injury, and you should treat it as we do wounds of any part of the body, and the same preparation should be taken that we observe in ovariotomy and hysterectomy ; it is just as vital and as important, and you get after such toilets precisely the same results, and I am really surprised that men who do ordinary surgery should come into this Society and condemn clean maternity work. I am always surprised and chagrined to find a man do so. You find men report a case of this kind. One recently occurs to me. Some one reported a Cæsarian Section ; he expressed his disgust for a sterilizer ; he said he rejected everything and boiled his materials and instruments one and a half hours, and his result was perfect—he had a perfect recovery. He evidently expressed his disgust for some of the spurious preparations you have seen recently ; and if you will question your friend returning from Europe closely as to the London mortality in abdominal surgery, you will find it is very high. I see that the London papers have taken up some of the comments of the Americans as to their carelessness and indifference and sloppy surgery. I will simply say in the last year I have done the best surgery of my life. I could not possibly under any circumstances duplicate it. I have even placed nurses, under the threat of excommunication, and I have secured by just that everlasting vigilance and West Point discipline results that cannot be duplicated by myself. I wondered at one time, when Mr. Tait reported his 146 ovariotomies, whether it was really true ; but I am prepared to say I believe it now because I have had a series of large

proportions, have not lost one case, notwithstanding they were pus cases, typhoid perforation cases, and I have done it by an everlasting grind. And I insist that that same grind should be made in our maternity work, and the Retreat is our most grinding institution. The cases that go to the Retreat are far from favorable cases. It is a common thing for a woman to walk in there with a dead fœtus between her legs, or to be shipped there, and from the fact that her previous labors have been trying and complicated she is often counselled by her physicians to go to the Retreat.

I wish to congratulate the doctor upon his particularly good results in eclampsia. He has now reported a second series, the last shorter than the first, and there is no class of cases more trying.

There is one question I should like to ask him—that is, in regard to the eyes.

Dr. Mordecai Price : I would like to call attention to one thing, simply to emphasize it. I am thoroughly in accord with the belief that where douches are indicated, either before or after labor, they should be used ; but in cleanly women, who are unquestionably in a perfectly sanitary condition in their sexual organs, I do not believe that douching is indicated either before or after labor, where everything is natural and as the physician would desire ; but my reason for calling attention to this fact is this : that within the last week I have seen three or four cases of perfectly natural labor followed by high temperature in three or four days that had been douched with bichloride solution, with one or two exceptions, and just as soon as the bichloride douche was forbidden, and simple warm water was used instead, I, fearing that there might have been some injury, and that injury not apparent at the time I examined the case, I felt that the hot water could do no possible harm and might do some good. The temperature at once dropped to normal without any treatment whatever. I have seen this in not one case, but in dozens of cases within the last three or four years, until I begin to feel the question is not, Is there any injury ? but, Are you using 1 to 4000 bichloride douche ? I have seen an immense amount of harm by douching and continuous douching after labor, and I believe we can easily avoid this if we are simply careful. I believe one douche after labor is not objectionable, nor do I believe that it does a particle of good in a healthy woman. I am confident that hot water in case even of injury is all-sufficient for a perfectly aseptic recovery of a wound,

and I am confident that when it is taught in our obstetric schools that douches ought not to be used in private practice except where there is absolute injury, where there have been instruments used, where the hand has been introduced for podalic version, or uterus handled for some operation during delivery, where douching might be indicated. But in a natural labor in a healthy woman I think the rule should be to let Nature alone.

Dr. E. E. Montgomery: I would like to ask if the members of this Society have seen any cases of mercurial poisoning following the use of bichloride douches. I saw a case recently in consultation with a gentleman, where mercurial douching had been pursued 1 to 3 or 4000 solution used once daily, and patient suffered from most violent mercurial poisoning, so much so that she was unable to eat for some length of time and subsequently died.

Dr. John C. Da Costa: I can answer your question, I think, as to poisoning from mercury from douche, not, however, after labor. I have had two cases within the past few years in the Jefferson Hospital in which 1 to 2000 bichloride douche was used; in one case the whole mucous membrane of the vagina and the mucous membrane of the intra-vaginal portion of the cervix sloughed off, leaving a perfectly raw surface; in the other case it did not slough off entirely, but only partially.

In regard to douching before and after labor, my ideas are very much in accord with those of Dr. Mordecai Price. Nature has been confining women for about six thousand years without ante-partum or post-partum douches until the last ten or fifteen years, and we certainly did not have a very great mortality. I can remember about sixteen or seventeen years ago, when I was working at the Lying-in Charity before the days of antisepsis, we knew nothing of vaginal douches, either before or after labor, except the directions of Dr. Albert Smith, that in cases of post-partum hæmorrhage we were to use hot-water douche. We were attending women in the lanes and alleys of Philadelphia, and more than once I had to give the husband money to buy the soap for use in washing our hands, yet the mortality was only a quarter of one per cent., one woman in 400, half the mortality of the present day.

I was talking a short time ago with a very prominent alienist, and he was asking about ante-partum and post-partum douches, and he told me since douching has been so marked a feature of labor that the number of cases of sepsis during the last ten years

that were brought to him among insane patients were very much more than they had been in the previous ten years. I think he said in the first ten years there were two cases, in the last ten years there were 28. He took the ground that the sepsis was introduced by the doctor himself from the outside.

Dr. Joseph Price: I would like to say a word in regard to the conditions that have changed greatly. In old times, while people were cleaner than they are at present, or during non-specific days, I would go further and say, while the surroundings were better, as to the specific condition of affairs in city life that matters have changed greatly. Several years ago I wrote to physicians in healthy rural districts as to maternal mortality. The replies convinced me that mortality is what we would naturally expect among a clean class of people, free of contaminating troubles, clean men and clean women, and these conditions exist here as well as there. For instance, half a dozen of my friends were married about the time I was married; I expected all of them would have families, and they all have. I knew them to be Bible-virtuous. At the same time I knew half a dozen who were not; many of them have no children, and in others their wives have been diseased. At college the same condition existed. Some of my friends married; either their wives are ill or sterile, or have been the subjects of surgical interference, but the Bible-virtuous men have large families now. But right here let me say that we know perfectly well that 96 out of 100 men above the age of twenty-two in large cities have been the victims of gonorrhœa or something worse. Therefore the wives of these men should have an ante-partum douche and a post-partum douche, first to save the child's eyes, and then to save the woman, and these facts you can simply stamp right here from clinical observation.

Dr. Carey: I will report another case of mercury poisoning, in which douches were used in 1 to 2000, the condition was accompanied by spongy gums, fœtid breath, mercurial sore mouth, and profuse diarrhœa supervened, and that was followed in a few days by mucus and bloody stools and tenesmus. The patient was in very great distress for a few days, but finally recovered. About a year after that the patient was again confined prematurely and died of sepsis. The douches were not used a second time.

Dr. C. P. Noble: The first five years of my practice I spent in the Lying-in Charity just about the time of the first *furore* about douches. They were used very strong and very frequently, and

yet the only puerperal case that I ever saw affected amounted only to mild salivation, so that the percentage of cases must be low. In my surgical work I have been probably influenced by this fact, and I have not been as rigid as I might have been, yet in all my surgical work there has been possibly no poisoning at all. There was one patient I operated upon for sarcoma of the uterus, with very stinking, sloughing discharge, where, wishing to have the vagina aseptic, I ordered wet bichloride packing in the vagina, let it stay there all night, and operated the following morning. The night of the day I operated the patient had dysenteric stools which I thought might be due to poisoning. Otherwise there has been no sublimate poisoning.

Dr. J. M. Fisher : I would like to ask Dr. Norris, in reference to the examinations before delivery, how often patients are generally examined before labor sets in. I think a great deal of infection comes from frequent examinations, in spite of antiseptic precautions. I think that the reason why so many women in the country are delivered without any post-partum range of temperature is due to the fact that the doctor very often does not get there until the baby has been born, and therefore does not have an opportunity to make more than one or two examinations. I do not recall a case where the child was born before the arrival of the doctor where there was any trouble subsequently.

In reference to douching, it is well to bear in mind that there is another organ besides the finger that may carry infection to the parturient tract several days even before delivery, and I think in the absence of bacteriological examination it is well to give an antiseptic douche. I had one case in my practice of bichloride poisoning from douching on the part of a nurse, although the douche was not ordered in the case. The patient thought she could not pay me for attendance after delivery, so the nurse was left in charge ; I was sent for subsequently because the patient had bloody stools, spongy gums, etc., and on inquiry learned that the nurse was giving bichloride douches several times a day. I have been impressed with the fact that in Dr. Norris's report there were so few lacerations of the pelvic floor. I am sure laceration of the pelvic floor is very much commoner in ordinary practice, and I think it is important to know the position he places the patient in for delivery, and the means adopted to prevent the accident.

Dr. Maier : I do not think that examination is so liable to cause infection as does Dr. Fisher. That a large number of women

suffer from uterine inflammation there is no doubt. We know, too, from investigations, of the presence of micro-organisms in the cervical canal and vagina of many healthy women. These are only awaiting more favorable conditions to become virile ; conditions which are certainly predisposed to by the abrasions and lacerations consequent on the passage of the child's head through the genital tract. I think, therefore, that these surfaces should be treated surgically, and to that end would favor the use of douches. My belief is that it would not make so very much difference in the mortality, yet anything that would lessen it at all would be worthy of the profession going to a little greater trouble.

Dr. Stubbs : It seems to me some of the advice you have given here to-night applies more to public institutions than it does to private practice. I remember very well a bright young physician in Wilmington who was going to wait on a lady in confinement ; he called to measure her pelvis, and the next day she sent him a note that she did not care for such "tomfoolery," and had gotten another physician. In the same way I find people object to vaginal douches before labor. It is a difficult matter to enforce and carry out. You say in public institutions it has to be done, and carry it out. In private practice they will say, "I will get some one who won't do it," and you lose the case.

I agree with Dr. Mordecai Price that douches do a great deal of harm and are a source of a great deal of trouble.

Dr. Burgess : Some years ago I had an opportunity of examining the pelvic organs of 27 women who died of puerperal sepsis, and in these cases there were lesions of continuity either in the cervix or vagina, there were raw surfaces open ready for the reception of poison if present. The question must naturally suggest itself, What are you going to do to prevent it ? In the presence of infection something must be done.

Dr. Norris : In closing the discussion, I will endeavor to reply to the several questions asked. In the first place, Dr. Noble perhaps did not hear my statement as to the use of saline transfusion in the eclampsia cases. One case that was reported to-night received an enema of eight ounces of normal salt solution every four hours for thirty-six hours. Aside from the use of normal salt solution after severe hæmorrhage and in the presence of kidney insufficiency to help the elimination of toxines that are stored up in the woman's system, an interesting phase of the use of saline infusions is that recently proposed for the treatment of septicæmia,

and based upon the belief that these infusions will produce leucocytosis, and thereby help the woman in her battle against sepsis. In every case of sepsis with which I have come in contact during the last four months I have used injections of normal salt solution as an adjuvant to other treatment, and the results will be published at a future time. So thoroughly convinced am I of the value of saline transfusion, that I think a suitable nozzle (practically a large hypodermic needle, since an ordinary hypodermic needle will not be sufficient) should always be a part of the obstetrician's armamentarium, and I should as soon think of going to my obstetric cases without my forceps as without an instrument for the subcutaneous or intravenous injection of normal salt solution.

As to the Retreat not receiving emergency cases, it is just such cases that bother me most. If the women were under my supervision earlier in their pregnancies I would have more nights of comfortable rest. I have had 1 death in 745 cases. That case was brought to the Retreat so ill she could not lie down in the ambulance, and was compelled to sit on a chair. Only to-day I authorized the admission of a patient who will enter with very serious and advanced heart disease. Eclampsia cases come on me suddenly. If I get the women in time, and can make repeated examinations, I have the cases under my control, and with the opportunity to induce labor I feel sure I can save many of the cases.

The number of deliveries has increased since my service at the Retreat, for what reason I am not absolutely certain. I believe my occupying a position as a quiz master previously, and having instructed large classes of students, may have something to do with it, since many of these men are practising among the poor, and I find they frequently refer to me patients who promise difficulty. With 745 cases in less than three years, while in Dr. Goodell's time the annual average was 120, and in Dr. Price's the largest number for a year was 199, I am certain that if the accounts were cast up, so far as concerns complicated labors, and especially eclampsia, there would be no discredit on my service.

It is true that the Retreat is not a teaching institution, and it is a pity that so much material should go to waste. I believe with proper supervision of students there is very little risk. The outpatient obstetric work of the students at the university is very satisfactory. Indeed, they often have less assurance than the average hospital interne, and their work is consequently less meddlesome.

As to the babies' eyes; for more than two years I have had no cases at all of ophthalmia. It is Dr. Price's belief that the ante-partum douche is a preventive of ophthalmia. It is my belief that while it may assist it is not an absolute preventive of ophthalmia. In spite of the ante-partum douche I had four or five cases in my first year in the Retreat. Then I began the Credé method, which to some men seems cruel, because it produces sometimes a mild conjunctivitis, which lasts twenty-four hours; but with at least 500 cases without ophthalmia I pin my faith to it, and believe that if we make some babies' eyes sore for a few hours and protect one from gonorrhœa the balance is distinctly in favor of that method. I think it is dangerous to teach the rank and file of men in practice to use ante- and post-partum douches. Many of you have seen the kind of syringe carried in the obstetric bag to be used for the post-partum douche—a dirty rubber syringe, with a dirty nozzle. I have seen a man take a dirty catheter out of a drawer and hand it to me to catheterize his wife, and yet he was a physician. Such men cannot with safety use post- or ante-partum douches.

No one can use bichloride solution in the vagina day after day without destroying tissue and putting women in the very position for micro-organisms, if they gain entrance, to produce widespread and destructive changes.

At the Preston Retreat the patients very rarely receive douches in the puerperal period. If there is a slight rise of temperature, with some odor to the discharge, the nurse knows at once that when I go into the ward she must have in readiness sterilized instruments, including a speculum, in order that I can inspect the vagina from cervix to vulva, using an electric head-mirror in many cases. If a douche is to be used, I use 2 per cent. creolin solution. The water must be boiled, since water that is not sterile is a source of danger.

Now, as to the antiseptic value of the ante-partum bichloride douche, for my own part, I scarcely believe that a douche of one quart of 1 to 4000 bichloride of mercury will destroy all the micro-organisms that may be in the vagina. I believe the effect largely is mechanical. In my private practice I never think of using ante- or post-partum douches, except under the circumstances detailed in my paper this evening. If, on the first examination of the woman, there is a greenish or dark-brown discharge, I thoroughly disinfect the vagina, and if the woman is finicky and finds fault,

a little tact and explanation will overcome her objections. The choice of antiseptic, however, is immaterial, but bichloride is convenient and always readily carried and is a useful one. In the puerperal period in hospital work I use creolin.

As to the cases of poisoning, a 1 to 2000 bichloride douche is used before and after labor at the Preston Retreat. I have had a case of tender gums and slight salivation following a single douche of 1 to 2000 used after labor. That is the only case I have seen.

The doctor has asked about the number of examinations ; in my report last year I stated that they were as infrequent as possible. There are those who declare that you must never examine a parturient woman for fear of infecting her. It is my practice, when called to a case, to cleanse my hands most thoroughly and to practise careful abdominal palpation, then to cleanse my hands again and make an internal examination. I never make another examination unless something occurs to make me believe that there is abnormal delay, and a second examination may then be made to determine whether or not to use forceps. If, however, there is a right occipito-posterior presentation or a face or a shoulder presentation, I think a man who can cleanse his hands sufficiently to enter with confidence the abdominal cavity need not fear to repeatedly introduce his finger into a woman's vagina. Backward rotation or other complications could be recognized and promptly met if examinations are made at intervals in complicated cases, but always with clean hands.

Last year my report showed that there were 44 lacerations of the perinæum in 500 cases ; this year, in 245 cases there were 17. I believe this difference is due to the fact that there have been a larger number of multiparæ and to the fact that slight lacerations of the perineal body were disregarded. Doubtless it is best to repair even the slightest laceration ; but a busy man will sometimes neglect such cases. I never neglect the repair of the slightest tear extending up one or both vaginal sulci, operating with the same care and in the same manner as recommended by Emmet for secondary perineorrhaphy. The time to treat the injury and promptly bring about its repair is immediately after labor.

I feel very strongly about this subject of douches, and yet I do not wish myself to be understood by those who read the Transactions of this Society that I approve of routine ante- and post-partum douches used by the general practitioner. To him I would hold up my hand in warning and say, " Keep yourself clean and

let Nature take care of the germs in your patients in the large proportion of cases."

Vaginal Incision and Drainage of Suppurating Hæmatoceles, due to Ectopic Gestation.

By Charles P. Noble, M.D.

(See page 282.)

Discussion.

Dr. Norris: I was very much interested in Dr. Noble's report of these two cases. The point, as I understand it, is that in old cases of pelvic suppuration vaginal drainage is a temporizing plan, or in the end perhaps a curative plan of treatment. It seems to me that is simply coming back to the old-time treatment of pelvic abscess—the plan used by our fathers, and many cases were cured by them. I believe with Dr. Noble that often it is a life-saving measure. I have one patient about to be married a second time, in whom drainage of an abscess was secured through the vaginal vault, and she is perfectly well. There is still a small thickening to be made out in the region of the right tube and ovary. A year has passed by, and I believe it is a practical cure. I have, however, read of two or three cases where this treatment has been attempted too early and the operator found himself in a plight. The point is to drain the abscess and give the patient a chance to recuperate, and, if necessary, operate for the removal of the disease that remains when subsequent trouble arises. It is rational practice, and has proved efficient in some cases in my hands.

Dr. Joseph Price: Dr. Norris has stated, and stated correctly, that this is a return to ancient treatment; the tendency at present is to the ancient treatment—that of vaginal incision. This many of us lament. I daily call attention to that fact. For instance, to-day, in three sections for pus, bilateral in nature, mutiple in nature, huge pus tubes and huge ovarian abscesses with universal adhesions to small and large bowel, and with the omentum tied down. Obtaining specimens is not the important point in an operation; but leaving conditions as near normal as possible, by repairing the small bowel and relieving adhesions, this is the most important feature of the operation, and it is a daily demonstration of the

folly of continental operations by incision and drainage, and even that of extirpation of the uterus and leaving specimens, as in many cases practised on the Continent. An allusion is made to Mr. Tait and his early work. I have myself never seen a pelvic hæmatocele. I know absolutely nothing about the classical pelvic hæmatocele of the books, unless it be due to a darning-needle, a plunge of some instrument into one side or other of the uterus. I have seen such cases due to instruments, stabs or thrusts. Thus twelve or more cases recorded by Mr. Tait of a boggy mass right or left of posterior; accepting his diagnosis, I would open over the abdomen and remove the ectopic sac. I would not hesitate to open the abdomen and remove the mass. In Dr. Norris's case I should hardly think the woman safe with the mass remaining, even if as large as a black walnut. In that case he has the additional complication of a cicatrix and anchorage when it falls into the hands of the next man, which will complicate the procedure. If any one of you to-morrow have the choice of enucleation of glands from a neck that has already been incised and drained or one that has not yet been touched, you will accept the one that has not been operated upon, will you not? I have done a good number of operations. This procedure will give you one hundred women to sing your praises, and large numbers will return to others for completed procedures; and it is just so in these ectopic cysts. You can often peel them off as you would an orange from its peel. This week I peeled out an ectopic sac without a ligature, and I stated, after freeing bowel adhesions—rather, I asked if it would be a justifiable procedure by the vaginal route—and they all agreed that it would not. This woman has been ill and has been treated by a number of physicians, and she was ill when I operated, and yet she has made a beautiful recovery without a hitch. I do insist, while the profession is returning to primitive operations, I insist there is a degree of surgical timidity in it. A few years ago I said to Dr. McMurtry, of Louisville, "Pelvic surgery, as we practise it now, will be a lost art;" but I did not think that I would live to see it. I said if by an act of Congress we were compelled to do vaginal work I would give away my bag. I have large numbers of cases coming to my hospital after vaginal incision. I have one to-morrow which is septic, and I am going to do a section. I am going to remove the puriform collections. I have a cicatrix, and I am going to have increased hæmorrhage and shock from the vaginal cicatrix to complicate my procedure. You remember the historical instance of the

woman from California who had had three or four tappings by a celebrated Scotch surgeon. She returned the fourth time to Europe for Mr. Tait to remove the cyst, emaciated, feeble, and exhausted for a complicated procedure. Four attacks of localized peritonitis had complicated her condition and increased the shock, and in the enucleation of this cyst he lost her, and he said to the world, "Keith is responsible for this woman's death; I am not." I feel the same way. Reasoning that "*if I have an ovariotomy done I lose my patient; if I tap her I get twenty-five dollars each time I do it*," this explains the action of some physicians. I insist upon it, all these operations can be done with a very low mortality. In a series of 142 abdominal operations for extra-uterine pregnancy, two I lost because I did not know enough about saving them at that time. In that number many were suppurating, and they were very purulent and offensive; there is no class of cases more so. It is so very foul and offensive it almost drives the crowd out of the operating-room. One or two pitchers of water generally brings the patients up. I have seen them myself with a temperature of 105°, with an old septic necrotic sac. I remember, some years ago, going to Pottsville to see a case of that character that had been punctured and repunctured and a drainage tube passed around her pubic arch, and when I saw her she had seven sinuses fore and aft, and I did a section and got rid of a large quantity of pus. So I realize that a simple puncture with drainage with these patients will improve temporarily only; but you can get cures by a perfected procedure. In the last ten years I have incised one vaginal vault, and I regret that.

One of the cases reported this evening has been previously reported as a pelvic abscess and is on record as such.

Dr. Carey: Simply because puncture of the vagina was resorted to in Dr. Noble's case, it seems hardly fair to say that a person who will puncture the vagina in a case of this kind is timid. As surgeons of course we should consider the chances of the patient to get well in every operation we undertake, and in this class of cases, it seems to me, puncture of the vagina will give the patient a very much better chance to get well than more radical operation. Of course that would be the desirable operation [the abdominal] if the risks were not too great. From the cases recorded we know these cases have done very well. The second case Dr. Noble reported I saw him operate upon. I know, from an examination of that case, that the patient's chances for recovery follow-

ing radical operation would have been exceedingly feeble. I doubt if she would have lived through the operation. As you have heard, she did make an excellent recovery. I am sure the chances for recovery after puncture in this case is as good as chances for recovery in pyosalpinx after rupturing through the bowel. I have in my practice a patient who nearly seven years ago had pyosalpinx. Because the patient was *in extremis* Dr. Goodell refused to operate. Rupture occurred and she got well.

Dr. GEORGE I. MCKELWAY : The discussion has wandered from the subject of the paper, and has gone into the whole realm of pelvic surgery. Dr. Price yields all for which he contends when he says that patients will undoubtedly improve after this procedure. Dr. Norris, when speaking of this operation, said it might be done tentatively. I have done it many times, but I have done it tentatively only. For instance, a woman will be brought into the Philadelphia Hospital—possibly a case of neglected, traumatic, criminal abortion, or of puerperal sepsis. She will have a collection of pus, sometimes amounting to pints, in her pelvis and abdomen ; and I can see no reason why I should open her abdomen, with the practical certainty of distributing this pus throughout her peritoneal cavity, and then trust to washing her out with any numbers of pitchers of water, when I can evacuate it with scarcely any risk through her vagina. If abdominal section be done primarily in such cases, the result is most surely the patient's death ; but if vaginal section, douching, and drainage be first done, her condition will likely be so greatly improved in three or four days, or perhaps a week, as to justify me in opening her abdomen and removing whatever should come away.

We see in the Philadelphia Hospital cases of such character as are not seen in the other hospitals in this city or in private practice. Many are police cases of syphilitic, prostitute drunkards, who, in their illness, hide away or are hidden away until a coroner's inquest is imminent, and they are then sent in, in a patrol wagon, with a lying history ; or they are the abortionist's victims ; or the wretched, poor, starved subjects of the midwife's ignorance, or of the medical student's campaign for experience. In almost every case immediate relief is demanded by the patient's condition. Abdominal section means death ; vaginal section, etc., results, as Dr. Price states, in improvement.

In such cases, in my judgment, it should always be followed by abdominal section when the woman's condition warrants it,

thorough exploration of the pelvic and abdominal cavities, and the removal of whatever should come away. This will usually be all of her pelvic organs.

Dr. M. Price : The statement that these cases do get well, the fact that they recover from the immediate effects of the vaginal drainage is not, to my mind, a proof that the case has recovered. A few years ago, in this room, an extensive paper was read enumerating a great number of cases, and, among others, two cases of my own that I had reported ; one of them in consultation with the elder Keating, of what then, some fifteen years ago, was supposed to have been pelvic cellulitis ruptured through the bowel. That woman was supposed to have recovered ; she never bore a child afterward ; and only a few months ago I was called in to see her in a very dangerous sickness, and I made an examination, and found her pelvis again full of pus ; and she told me, notwithstanding the fact that she had told me repeatedly from the time that she was attended that she was perfectly well, that from the time I attended her up to a few weeks ago, when I operated upon her for a complete removal of the trouble, she had never been absolutely free from suffering or distress, although she was thoroughly convinced that if she complained something would have to be done. The case was one complicated by rupture through the bowel in the first place. And as we claimed at the time, the case was cured. I have no doubt that of the greater number of cases which were reported that night, nine out of ten of these cases died of some complication of the disease. I think the saddest case I ever saw in my life was in Germantown. One of the loveliest women I ever knew had been attended by three or four physicians who were afraid of abdominal section, and who drained, and in the course of two or three or four weeks it closed up ; they again drained it, again drained, and then it became a question, owing to the woman's desperate condition. Her husband began to rebel against such procedures ; but the woman was simply on the verge of death, and this operation through the vagina had opened the track for septic influences, had opened the track for poisonous material to infect the contents of the sac—for ordinarily the contents of the pus tubes are not definitely poisoned. I have seen all the viscera of the abdomen deluged with such pus, and with absolute impunity washed it out with a little warm water, and the case recovered completely. In fact, I would rather one hundred times to-day—if I were operating for statistics and for results

alone—I would rather operate on full-fledged pus tubes if I wanted a low mortality. I believe these cases recover better with drainage than simple ovariotomy without drainage. I have seen a great number of cases ; one recently with a number of adhesions to the pelvic wall and to the vaginal vault that had been made by frequent puncture in order to cure what they called pelvic abscess. Now, we know as well as we know anything in pelvic surgery, they are multiple, or if they are not multiple they are situated in a locality that infection passes from the one we have opened into the other sacs of the tube or into the ovary itself, and infection takes place, and you are only putting off the evil day and adding an additional point of danger. Now, there are very few women indeed who come to such desperation that when the trouble is removed that the woman does not begin to rise at once from her condition and improves from that hour ; and I think we are making a vast step backward when we begin to talk about curing these cases from the vagina. We are going into an ordinarily infectious neighborhood in order to do what we call clean surgery ; and let me say that the simple opening of an abscess in there is not a cure ; the cause of danger and suffering is the adhesion of viscera ; it is necessary for the health and comfort of the individual that you should remove these adhesions ; you have left what is worse than pus, you have left a dragging mass. In the two cases reported by Dr. Noble the hole tends to make the patient violently septic ; when the hole was already open it only required cleaning out of the cavity to give the woman a chance ; the second case was as clearly one for section, loosening up adhesions, cleaning out the abdominal cavity, and leaving the woman in a perfect condition. There is no reason in the world why these women should die. I have not seen a pus case die because of operation ; they are sick, they are septic. If your surgery has been done right it has given them the greatest relief. No drug, no saline injection, or anything you can do will be as valuable. If your work is done right your patient will recover ; and when you do a vaginal operation you have simply opened the path for germs. There is nothing to justify it. You can't go home and feel proud of your work. And do they get well ? No, sir. I have seen any number of cases in this town that not only do not get well, but promptly die. I think we should call attention to this fact on all occasions. I think we should protect each other, and every way do as we would be done by ; but we should also be just to ourselves,

we should be just to those who are working with us and in the same direction, certain procedures that are wrong, certain procedures that lead to destruction of the patient; we should be able to say to a man who resorts to them, "There was a bad result in the case you operated upon, because she is in my hands, and I am to-day treating her for the condition which you shirked." In this very room the assertion was made that curettement was curing many women of serious conditions, and cases were sent to the man who made the statement from all over the State and the country; but the cases were not cured; many of them have come to me and my brother for treatment; they do not return to the first physician, and I am sure many of them have gone to other surgeons. I have to-day two cases admitted into Dr. Joseph Price's Hospital, both curetted three months ago for intra-uterine disease, as they said, and clearly traceable to that man's work as ever I traced anything in my life, and why not tell him so? "I have three or four cases, Mrs. A, B, or C, on whom you operated; they have returned for worse conditions." There is nothing to hurt him; and then, when he comes to me and says, "Doctor, what are they?" giving number, address, and everything, and why not? Because that man is doing an immense amount of harm and does not know it. Do these cases go back to him? No, sir. I have heard men say that they have a number of times curetted and cured, and those very same men had patients lying in our hospital with pus tubes. If a man gets some cases I have operated on and failed to cure, it is right for him to let me know who it is, and let him tell me why I failed, and let him tell me I failed, and then we will get at the truth; but as long as we stand here and mention cases and mention that accidents have occurred in the hands of others, and we cannot tell the man to his face that such are the facts and such the conditions, we will never get at the truth. I asked a prominent surgeon, when we had a gentleman visiting us, "Do you ever see an accident occur from curettement?" And he replied, "No." I believe that man said just what he believed. That is it; we have them by the hundreds coming in for relief from this procedure. I reported to this Society three such cases, and the man who had operated on these cases got up and said any one who would curette these cases was an idiot or a fool, and I operated upon them and cured them. That man was honest; he meant what he said, but why not tell him, "These

were your cases"? We need not complicate ourselves or bring ourselves into malpractice; we can be just as honest with our members as we are to ourselves; we can protect them to the fullest extent of the law because we believe them to be honest in the operation; if it were proven to them beyond dispute that these were conditions brought about by their operations they would quit it.

Dr. C. P. Noble: The discussion has been upon almost all questions except my paper, which was not upon the vaginal route as a means of treatment of the diseases of women, but upon the treatment of a specific class of cases, namely, suppurating hæmatocele by incision and drainage.

I quite agree with Dr. Joseph Price as to the infrequency of hæmatocele except when caused by tubal pregnancy. I have never seen a hæmatocele caused in any other way, although I would not deny that an intra-abdominal vessel might bleed from other causes, especially from traumatism.

Dr. Price opposes the plan of treatment advocated to-night, and advises abdominal section in all cases of ectopic pregnancy, whether the hæmatocele be suppurating or not, and charges all those who resort to vaginal incision in these cases—which, of course, includes myself—of timidity. I am quite willing to rest under this imputation, if thereby I can save a number of lives which would otherwise be lost. The statements of Dr. Price might have made a greater impression upon me were it not that most of the time I have been engaged in this work I followed the line of practice which he advocates; and it is because of the bad results which abdominal section gives in this particular class of cases, namely, large collections of pus in the pelvis, that for such cases I have abandoned abdominal section, and now resort to vaginal incision and drainage. The experience of all men who have reported their work carefully has been that between twenty and thirty per cent. of this class of cases have died when operated upon by abdominal section, including the radical removal of diseased structures; whereas, by a free vaginal incision, followed by efficient drainage, the mortality rate is almost *nil*, a goodly percentage of the cases is completely cured, and the remainder are so greatly benefited that if a further radical operation is demanded it can be done with a minimum of risk. I quite agree that "sticking a little hole," a mere puncture, into a large pus accumulation in the pelvis is miserable practice; but this is not what is advocated. A free incision is necessary, preferably a semi-lunar

incision, so that a flap is formed which will favor drainage. So far in all the cases I have treated by this method, whether suppurating hæmatocele or suppuration from any other cause, a prompt healing has been effected, and in not a single case does a sinus or fistule remain.

Dr. Price objects to vaginal drainage on the ground that all cases so operated on will require a secondary abdominal section for their cure, and that the risk of this secondary operation will be greater than that of a primary cœliotomy. I have no question that he is in error on both these points. When I began using vaginal incision and drainage for pus accumulations my own views as to the necessity of a secondary operation corresponded closely with those of Dr. Price ; but experience has shown me that much better results can be secured by this method than I had supposed possible. The experience of others with which I am familiar amply bears this out, so that it can be said without exaggeration that not more than from twenty to thirty per cent. of these cases will require further treatment if the preliminary incision and drainage is thoroughly practised. I must disagree entirely also with the contention that, should a secondary abdominal section be required, it will be more risky for the patient than if an abdominal section had been done in the first place. Patients having large pus accumulations are very sick and stand major operations badly. Many of them have been sick in bed with septic fever for weeks ; they are emaciated ; their nutrition is poor ; their kidneys and other emunctories are crippled ; the pulse-rate is rapid and the heart feeble ; in short, the patients are typically bad subjects for a serious operation. If an abdominal section is done upon such cases, in order not to be fatal it must be hurried, the work incomplete ; drainage must invariably be used ; and if the patient recovers, the abdominal and pelvic viscera are in scarcely if in any better condition than after a vaginal incision—as, very frequently, in these large pus accumulations it is necessary, in order to avoid a fatal issue, merely to drain the large abscesses and to leave the diseased tubes and ovaries *in situ*. We have all heard Dr. Price report such cases, and state that the object of the surgeon under such conditions must be to save life, and not to do ideal surgery. Vaginal incision in such cases saves the patient the risk of soiling the peritonæum, with its resulting peritonitis ; and also the very large risks in these cases of a ventral hernia. The abdominal wound under such conditions is always sutured rapidly and imper-

fectly ; and this fact, together with the presence of the drainage tube, almost insures the subsequent occurrence of hernia. Dr. Price claims that a secondary operation in such cases, after vaginal incision, is greatly complicated by the cicatrices resulting from the incision *per vaginam*. This complication is inherent in the old methods which he still continues to employ, although most of us have abandoned them. He complains of the frequency of wounded bowels and of hæmorrhage low down on the broad ligament. Both of these bugbears disappear if the Trendelenburg posture is used and a hysterectomy substituted for the removal of the appendages. Hæmorrhage from the posterior face of the broad ligament ceases to worry the operator, as not only the ovarian arteries, but both uterine arteries are ligated, and the ragged area low down on the broad ligaments is covered over by the healthy peritonæum which is stripped off the front of the uterus and broad ligaments. Should Dr. Price resort to these methods, his opinions upon these subjects, like those of the rest of us, will undergo radical changes.

There is another point which must not be neglected. Most of us have gotten beyond the first crude stage of abdominal surgery, when the only thing we could do was to remove all diseased structures. In the beginning this was good surgery, because it was the best that could be done for the patient ; but the result was that all these patients were inevitably sterile. By resort to vaginal incision and drainage in the more acute cases of pelvic inflammation, especially those of puerperal origin, and also in the more chronic cases of hæmatocele, including those that are suppurating, we will be enabled to cure a goodly number of them without sacrificing their fertility. When one does an abdominal section in the midst of a pelvic peritonitis unilateral in origin, if the pelvis is filled with exudata, by the time the appendages are freed the broad ligament on the good side will be so torn and the ovary look so bad that it appears necessary to take it out, and out it comes ; whereas, in such cases, if drainage is employed, should it become necessary later to do a secondary operation, at the most only one appendage will require removal. I feel quite hopeful myself that vaginal drainage in acute inflammation will enable us to conserve one or both appendages in many cases, which heretofore it has seemed necessary to sacrifice.

Dr. M. Price : Did you ever have an extra-uterine case have a baby afterward ?

Dr. NOBLE : I saw one in my cases within a week. If I should look it up I am quite sure that I could report three or four.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, December 15, 1896.

The *President*, ROBERT A. MURRAY, M.D., in the Chair.

Specimens of Uterine Fibroids.

Dr. LE ROY BROUN presented a number of specimens, the chief interest of which he stated to be the beauty of their preservation. They were preserved by Dr. George C. Freeborn in a 5 per cent. solution of formaline. The four fibroids and vesical presented were all removed on account of pain. Some of them bring out very clearly that the necessity for the removal of a fibroid does not depend upon its size. It is well known that often the smaller fibroids give much more pain than the large ones. Fibroids well in the pelvis often give more pain than those which have grown to a larger size and are well out of the pelvis. He then read the following histories :

Mrs. L., aged thirty-one, married, no children. Admitted on Dr. Cleveland's service at the hospital, on account of her inability to attend to her ordinary duties, due to constant dragging pelvic pains, anæmic headaches, and a profuse menstrual and inter-menstrual flow, which had become constant for the last six weeks.

The local condition was a multiple myofibroma of the uterus of some four to five inches at its largest part. Dr. Cleveland removed the tumor and uterus by morcellement November 2.

The uterine arteries were secured by silk ligatures having electrodes, by which they were removed in forty hours.

The patient's recovery was uneventful.

Mrs. D., aged thirty-two, married, no children. Applied for admission on Dr. Cleveland's service at the Woman's Hospital on account of constant pain throughout the pelvis, accompanied by vesical disturbance, anæmia, and gradual loss of flesh. The local condition was pedunculated myoma of the uterus, with a double

pyosalpinx. Abdominal hysterectomy was done by Dr. Cleveland October 26.

The patient's recovery was uneventful.

Mrs. T., aged thirty-eight, married, four children. Admitted to the hospital on Dr. Cleveland's service with a history of constant pain for months. She applied for a bed on account of the pain becoming more severe throughout the pelvis and down her limbs.

She was unable to stand on her feet for any length of time.

The local condition was a fibro-myoma of uterus. Hysterectomy (abdominal) was done by Dr. Cleveland October 12.

The recovery was uneventful.

Miss A., single, aged forty-three, was admitted to Dr. Cleveland's service for a multiple fibro-myoma filling the pelvis and to an extent impacted. She sought relief on account of the almost constant vesical disturbance, menorrhagia, and anæmia.

Abdominal hysterectomy was done by Dr. Cleveland November 16.

The course of the operation was uninterrupted; so was the recovery. On this patient was used for the first time the silk ligature and loops devised by Dr. Grad, Senior House Surgeon of the hospital, and it gives me pleasure to certify to the ease with which the ligature was untied by the loops and removed.

The pain given the patient was not as great as that usually given when pulling the ligature down some weeks after in making the effort to cut it. The ligatures in this case were not removed for five days, in order to be sure of no bleeding.

As proved by other cases on which they have been used since, this fear was not well grounded, and they might have been removed at the end of the forty-eight hours as usual.

Discussion.

Dr. Broun: Dr. Cleveland's method is, after opening the abdomen, to separate the bladder first, then go through into the vagina. Instead of tying off from above down, he ties off the uterine arteries first and afterward the ovarian. By this method he cuts off at least two thirds of the blood supply of the uterus, and his operations are almost bloodless, there being hardly more than two or three ounces of blood lost at the most.

The President inquired whether Dr. Cleveland ligated the uterine arteries from below.

Dr. Broun replied that in doing abdominal hysterectomy Dr.

Cleveland first exposes the tumor; then near the junction of the round ligament with the uterus he makes an incision on both sides; in the loose connective tissue through the folds of the broad ligament he runs his finger, readily pushing off the bladder from the tumor, where loosely connected, and cutting off the remaining portion where closely attached near the fundus. He then separates and cuts through in the anterior fornix into the vagina. He then makes his incision posterior to the uterus through the fornix into the vagina. He ties off the uterine arteries on both sides first, and in tying those off he is able to lift up the tumor much more readily. It may not be quite as rapid as by clamping and tying from above down, but it is certainly much more bloodless than the ordinary operation.

A Death from Septic Peritonitis Resulting from a Small Mural Stitch Abscess, Complicated by an Acute Nephritis Following an Abdominal Hysterectomy.

Dr. Broun: I report this case on account of its extreme rarity, feeling that if the condition had been recognized the woman might have lived, yet knowing that every care ordinarily exercised was brought to bear on her case.

The woman presented herself on Dr. Cleveland's service with a tumor filling the pelvis, and to all appearance connected with the uterus.

Its removal, together with the uterus, was partly accomplished per vagina by Dr. Cleveland. The completion of the operation by this route was abandoned on account of a narrow, long vagina, the fragment tearing out of the forceps, from their hold on the tumor, and the alarming hæmorrhage. The abdomen was opened, and the tumor, an apparently solid one of the right ovary, was removed.

The patient was returned to her bed in good condition.

The temperature steadily rose to 103.5° within the first twenty-four hours, and 104.5° on the second day. From this to the time of her death, on the sixth day, the temperature stood from 101.5° to 102°.

For the first twenty-four hours there was excreted							℥ vi.	urine.
"	"	second	"	"	"	"	"	℥ i.	"
"	"	third	"	"	"	"	"	℥ vi.	"
"	"	fourth	"	"	"	"	"	℥ vss.	"
"	"	fifth	"	"	"	"	"	℥ i.	"

From the first day the patient showed every symptom of uræmic poisoning, exaggerated restlessness, and, later, twitching of the tendons. With the increase in the amount of urine the temperature fell to 101° and a fraction and remained, as stated, about this point. There was at no time any disturbance of the abdomen or evidence of pain on firm pressure.

After various efforts the bowels moved freely on the fourth day, and a return of normal peristalsis was indicated by flatus being passed at that time and early on the fifth day. The routine course has heretofore been not to remove an abdominal dressing for one week unless there is some indication for so doing.

In this case the immediate rise of temperature, accompanied by such a scant excretion of urine and the exaggerated restlessness, all pointed to an acute nephritis, especially so as the temperature fell and restlessness abated with the increased action of the kidneys. That the sole cause of her condition was the nephritis, and not complicated by a mural abscess, was emphasized, in my mind, by repeatedly making firm pressure over the abdominal incision, and at no time causing any more pain than the ordinary discomfort attending such a procedure.

The post mortem examination by the pathologist is abbreviated as follows :

Ureters free and unobstructed.

Kidneys slightly enlarged, and shows lesions of parenchymatous nephritis.

A stitch hole abscess in the line of one stitch $1\frac{1}{2} \times 1$ cm. on the anterior wall of the rectus muscle beneath the subcutaneous fat. The abscess connected with the abdominal cavity by means of the puncture made by the needle. The peritonæum was moderately injected. Cause of death, septic peritonitis.

I am fully aware of the fact that in septic peritonitis there is a suppression of urine, and at first thought it would appear that this unfortunate woman died purely of a septic peritonitis resulting from an undiscovered stitch abscess, and that the scanty urine was a resultant of the poisoning.

That the septic peritonitis did not exist before the fifth day seems evident from the return of the intestinal peristalsis on the fourth, when gas was passed freely by the anus, and her general improved condition at that time.

The patient died on the sixth day.

The pathological report shows the nature of the tumor to be of such unusual rarity that I give it in full below :

Pathologist's Report, Case of Mrs. H.

Macroscopic.—Irregular oval-shaped semi-solid mass measuring 14½ × 12 cm. External surface smooth.

Section.—Mass surrounded by thin fibrous wall, which is lined intimately by a soft whitish layer averaging 12 mm. in thickness.

Central portion of tumor consists of a ragged cystic mass.

Microscopic.—Endothelial sarcoma.

G. C. Freeborn, *Pathologist.*

Dermoid Cyst.

Dr. Broun also read the history of the following case :

Mrs. G., aged twenty-eight, married, no children, one miscarriage seven years previous. Was in excellent health up to the last two years.

At this time she began to experience severe pain during menstruation.

The character of this pain increased in severity. During the last year the attacks of pain have been more frequent, being intermenstrual.

Seven months previous to entering the hospital she had an attack of pelvic peritonitis, confining her to bed for some weeks.

On account of constant pain the patient sought relief.

The local condition was a cystic tumor in the pelvis, and adherent.

The operation was done by Dr. Cleveland December 7. The cyst was densely adherent in the pelvis. After breaking up the adhesions the cyst was removed. The other ovary being much diseased and its tube thickened, they were also removed.

On account of the large oozing surface left in the pelvis the uterus was removed for better drainage.

The cyst was found to be dermoid in character.

The patient made an uninterrupted recovery.

I report the case on account of the unusual condition of the cyst. It was filled with sebaceous matter, having a few hairs scattered throughout.

In one portion of the cyst wall is incorporated a small piece of bone. From one portion of the cyst wall, hanging by a pedicle, is another cyst of about 30 cc. capacity, distinct in all of its parts from its parent cyst wall.

The contents of this second cyst at present seem to be that of

an ordinary ovarian cyst, albuminous and glairy ; however, this will be determined by the pathologist.

Discussion.

Dr. Malcolm McLean said that one of the most interesting points with regard to the four cases of fibroids is the very concise, clear, and definite suggestion Dr. Broun makes in regard to grounds calling for the operation. He fears that, in this day of many operations and large statistics, men sometimes forget to look for the real reasons which call for operation, and he was glad to hear Dr. Broun speak of that more particularly than of the shape, size, weight, or any other condition of the tumors themselves. The men who do not see so many of these cases are glad to get their history, and to secure some tangible rule by which to be guided. Therefore symptomology is exceedingly valuable in the presentation of cases to the Society. Concerning the case of death with septic peritonitis, were it not for the very high authority he would certainly take issue with the decision and say that the cause of death was suppression of the urine, and that it was distinctly due to the anæsthetic. It is a typical history of death under ether where the kidneys are involved, plus the mural abscess. Doubtless the operation was a long one ; and he is of opinion that sometimes the operators are a little careless about that. Sufficient consideration is not taken of the very great aid which it is to the patient to get through the operation quickly. The keeping of the patient for an hour or an hour and a half under ether is not a small item in regard to her welfare.

Dr. A. F. Currier said that the point in regard to tumors in the pelvis impressed him forcibly, because that is one of the principal indications for the removal of fibroid tumors, and particularly if the tumor is adherent to other structures. In cases of that character there is a tendency to encroachment upon the urinary function. In two cases which he could recall the interference with the urinary function was such that that more than anything else called the attention of the patient to the disturbance which the tumor was causing. The case of mural abscess impressed him very much as it did Dr. McLean. A small abscess of this character would be quite unusual as a cause of septic peritonitis, and especially as nephritis was proven by microscopic examination. Is it reasonable to suppose that the acute process was engrafted upon a process which already existed, exaggerated, perhaps, by

the use of the ether? He had made it a practice, especially in hospital operations, where the operation is likely to be prolonged, and particularly if the patient is very weak, to have a cylinder of oxygen at hand, and if the blood became dark in the course of operation to at once suspend the ether and give oxygen until the natural color of the blood returned. The effect of the formaline was very beautifully shown in the distinctness with which it brought out the different strata of tissues. The only objection that occurred to him might be that, in using a large quantity of alcohol with the formaline the proportions which the tumor originally had might be changed. Possibly by using only a weak solution that might be obviated.

Dr. BROUN stated that the preservative fluid is a five per cent. solution of formaline in water, and that no alcohol is used in it, and that the specimens do not shrink.

Dr. CURRIER said he had one word more to say concerning the fatal case. He thought there were usually no means of determining the presence of old kidney lesions, when they were quiescent, and so the indication would be wanting as to whether the case was a proper one for operation or not. He remembered a case operated on by him about a year ago, in which the woman was to all appearances in excellent condition for a severe operation of this kind —a very large woman, of magnificent physique, about fifty years of age. The operation was an abdominal one, in which a large fibroid tumor was removed, with the uterus, and she did badly from the very time of the operation, and died within thirty six hours. She passed very little urine after the operation; and if he remembered correctly, there was nothing in the previous history to suggest disease of the kidneys. He at first thought the ureters might have been ligated, but this was not the case, and no gross lesion of the kidney structure was found. On one side there were two ureters, and in each kidney there was a small cyst holding perhaps a drachm of fluid. But the woman had a very large and fatty heart and a very large and soft liver, so that these conditions, which were not discoverable before the operation, were sufficient to cause her death.

THE PRESIDENT said that he was exceedingly interested in the report of the cases of Dr. Broun because they bring to mind matters which come up almost every day. Recently two patients came to him, both of whom earn large salaries, and in each of these cases he found on examination a large fibroid tumor of the

uterus, extending in the one case into the right broad ligament, and in the other into the left broad ligament, but no enlargement of the ovaries or tubes. They were both able to do their work, never lost a day, and had not been troubled by hæmorrhage, pressure, or anything of that kind. He conscientiously could not advise them to have operations performed. As to the interesting remarks of Dr. MacLean, concerning the indications for operation, witness the statistics that Keith has given, even in his splendid operations and his statistics as regards the effect of the fibroid tumors that were left alone. It will be found that a great many of those patients, while they have lost the tumor by operation, are not so very greatly improved in health. Concerning the operation done by Dr. Cleveland, of cutting down and tying the artery in the broad ligament before opening the vault of the vagina, he thinks that in a large number of fibroids that could hardly be done. This is especially true if the tumor has developed, as it very frequently does, in the lower segment and into the broad ligament, because the displacement of the parts is so great that it is impossible to get down to the uterine arteries in those cases. He operated in such a case last summer where it would have been absolutely impossible to get down to the uterine arteries on either side. Again, last summer in such a case he was sorry he had not commenced from below and tied the uterine arteries first. Why not do a combined operation rather than subject the patient to a too prolonged operation from above? The longer the operation, just as in midwifery the longer the labor, the higher the death-rate. He takes very decided issue as to the case of septic peritonitis. Septic peritonitis is not so rapid in its results, as a rule, nor would there have been the improvement on the fourth day. If we find a patient with a low specific gravity of the urine for some little time we can be sure that the urine is not being secreted, and that a risk is going to be run in giving the patient ether. It is known, too, that where there is pressure from fibroids the heart is exceedingly prone to undergo fatty degeneration, and in a great number of such cases, when the ether has to be carried to a great extent, the result is fatal.

Dr. Broun (in closing) said that of course Dr. Cleveland's method of doing abdominal hysterectomy is not an iron-bound one. He adapts his method to his cases. His habit is to open the abdomen, separate the bladder, tie off the uterine artery, and then tie off above—that is, in suitable cases. Fibroid tumors,

when they develop in the pelvis and broad ligament, in many cases so distort and fill up the vault of the vagina that it is with the greatest possible difficulty that the uterine arteries can be tied off through the vagina. Of course it could be seen, from his report of the case of septic peritonitis, that he felt the cause of death was largely the acute nephritis, and it was a great surprise to him to hear the condition at the autopsy. He did not believe at the time that the condition developed at the autopsy was alone sufficient to kill the woman ; but the pathologist thinks differently, and so it goes down in the report. The fact remains that the pus from the stitch abscess did find its way below the peritonæum, and could, if not shot off by adhesions, cause death. On account of this rare occurrence the case was reported. As to the condition of the kidneys, he is confident the woman had an old kidney trouble before she came under observation, and possibly at the time the urine was examined once or twice, yet the one in charge of the examination failed to find either albumen or casts. As to fibroids, Dr. Cleveland operates on none of them unless there are some indications—and of course if it is a very large tumor that is an indication—as far as pressure, etc., is concerned.

Double Ovarian Cystomata Complicated by Four Parovarian Cysts, with One Intraligamentary Cyst—Seven Distinct Tumors in All.

Dr. McLean reported the following case :

Miss L., aged thirty six, unmarried. The operation was without unusual difficulty except the removal of the sac of the intraligamentary growth, which required the opening up of a large raw surface in very vascular tissue.

The larger tumor weighed twenty-two pounds, and was papilomatous, the extrusion of the papilloma having extensive attachments to the peritoneal surface of the right side of the abdomen.

The operation was completed with glass drainage tube in the *cul-de-sac* in one hour.

The patient was taken from the table in very unusually good condition, the pulse full and good at 76 per minute.

Ether nausea was rather severe, and continued at intervals all day and night. No pain nor other disagreeable symptom. On the 19th, the second day, the periodic vomiting of bile and mucus continued unabated. On the third, fourth, and fifth days (November 20, 21, 22) the vomiting continued at intervals of an hour or more, the stomach rejecting everything taken in the mean time,

and the bowels *refusing to respond* to the usual saline laxatives, enemata, etc. No *gas whatever passed the bowel*, and there was no peristalsis observable, as there was complete absence of borborygmus. The pulse gradually ran up to 118 per minute, the temperature reaching 100.6°. At this time the vomiting was very copious—large quantities of watery mucus—sometimes thirty-four fluid ounces being ejected at once. Tympanites excessive. On the evening of the fifth day, and during the whole of the sixth day (November 22, 23) the vomiting was *fæcal*, enormous quantities of *liquefied fæces* being discharged from the stomach several times during the day and night. During all this process the patient did not present the evidences of *pain*, *shock*, *or exhaustion*, but simply suffered the depression due to such a condition of affairs, especially as it involved the entire inability to take nourishment and deprived her of needed sleep. Stimulating enemata were employed.

A consultation of my staff being held, an early operation was advised. To this I objected, solely on the grounds that the more usual concomitant symptoms of intestinal *obstruction* did not appear in connection with the fæcal vomiting and intestinal stasis.

Believing that the case was a reflex one, and that the very irritable stomach excited a complete regurgitation or reversed intestinal contraction, I ordered a cessation of all things by the stomach, and supported the patient by rectal feeding alone. At intervals of a few hours turpentine enemata were used, and on the night of the sixth day gas was expelled per rectum. As soon as the tympanites were sufficiently reduced, calomel in small doses was given, and large fæcal discharges followed. The patient has fully recovered. I should state that the drainage tube was removed at the usual time.

This case involved such interesting and serious questions that I believed it worthy of especial report.

The prognosis in cases requiring reopening of the abdomen within the first week or two is notably unfavorable. And, on the other hand, a case of true intestinal obstruction is almost entirely hopeless without operative interference.

The most keen appreciation of the symptoms and their positive significance must be exercised and deliberate judgment brought to bear upon the emergency, so as to decide the most important question of the proper course to be pursued. Persistent fæcal vomiting is a dangerous and alarming symptom ; and yet, as this

case shows, it may be present in a case where operative interference would be uncalled for and unjustifiable.

Obstinate Reflex Vomiting for Four Days, Following an Abdominal Hysterectomy for a Fibro Myoma of the Uterus, in which Considerable Boroglyceride Gauze was Packed in the Pelvis to Check Oozing; Complete Cessation of Vomiting upon Removal of the Gauze.

Dr. Broun: The history of the case is as follows:

Mrs. K., aged thirty-five, no children and three miscarriages, was seen by me in the clinic for a considerable time during the last year for constant pains and vesical disturbances, due to a fibro-myomatous uterus the size of a fœtal head.

No ordinary treatment giving any relief, she requested its removal.

This was done through the abdomen on September 4.

Extensive adhesions existed between the tumor and the pelvic peritonæum. These being separated, the tumor was removed. The oozing from the separated adhesions was profuse, to check which I packed the pelvis with ten yards of a two-inch strip of sterilized boroglyceride gauze, the lower end of which extended into the vagina.

In thus placing gauze in the pelvis, my habit is always to first put the woman into a complete Trendelenberg position, push the intestines well out of the pelvis, cover them with a sponge, and have them held in this position by the assistant while the gauze is being put in place. In this way the gauze was put in place in the above patient.

The vomiting from the time the patient became conscious was almost incessant, for the first few days being every hour or two and for the last two days almost every half hour.

There was nothing given by mouth for the entire time excepting a little hot water the first night after operation, the patient being fed entirely by rectum. At no time was the rectal temperature higher than 100°.

The pulse the first twenty-four hours was excellent, full, and ranging from 75 to 90. After this it became progressively faster and of poorer quality. During the third and fourth days its rapidity and poor quality was such that grave fears of her recovery were entertained.

The intestinal peristalsis did not return until the beginning of

the fourth day, at which time copious enemas of warm water and oil brought away some fæcal matter and a good deal of flatus.

I had been previously told by Dr. Cleveland that he had in two or three instances cases of obstinate vomiting extending into the second and third day with patients on whom he had done an abdominal hysterectomy, and that this vomiting had ceased in each case after the removal of the gauze placed in the pelvis for drainage.

I had this in mind with this patient, yet feared to remove the gauze sooner than was done on account of the unusually bloody drainage, which kept up for three days.

In connection with the vomiting of this patient there was a striking vasomotor disturbance of the facial capillaries, evinced in an intense blush over both cheeks. This blush died away soon after the cessation of the vomiting.

Since my attention has been so forcibly drawn to this occasional nausea following gauze packing I have in another instance removed the gauze pelvic drainage in a patient on Dr. Cleveland's service, when the vomiting extended into the third day, with the result of stopping the nausea at once.

What the cause of this nausea is I do not know, and for that reason I report the case to the Society.

If it is due to the entanglement of a loop of intestine in the gauze, in spite of the care exercised to keep them well out of the way while putting the gauze in place, then this entanglement must take place after the woman is put in her bed.

If this is the case, then we who use gauze in this manner should adopt some safer method, for while no death has occurred on Dr. Cleveland's service from such a cause, it is certainly possible.

I have regarded its occurrence as entirely reflex, due to the presence of the gauze in the pelvis ; and in this case I report it appears to me to be eminently so on account of its association with the intense blush on the face, which was certainly of that origin.

Discussion.

Dr. A. B. Tucker said that, in his experience, lavage of the stomach has been most successful in cases of persistent vomiting or intestinal obstruction. He recalled his first Cæsarean section. The woman began vomiting as soon as she was from under the effects of ether, and vomited for four days. After lavage of the stomach with hot water and bicarbonate of soda the vomiting

stopped at once, and in two hours she had a profuse diarrhœa although every effort had been made previously to move her bowels.

Dr. Joseph Brettauer said that the case of Dr. McLean was certainly a very interesting one, and from hearing the history one would not think that it was possible that the patient would recover without any interference. She had all the signs of ileus, all the signs of obstruction, and still they suddenly disappeared. He has seen two or three cases of the kind, and has not reopened the abdomen, but has given opium. He has washed out the stomach, which ought always to be tried in those cases. He is inclined to think that it is sometimes caused by mechanical irritation of the gut. In Dr. McLean's case he had to deal with seven distinct tumors, and certainly had to handle the intestines. They are always in the way, and have to be shoved back, and he thinks this irritation of the gut is responsible for these actions. Many operators at the present time pronounce the giving of opium the most dangerous procedure in this kind of work, but he finds that in these cases it is of immense value in small doses. The speaker does not take seriously the remark of Dr. Broun about pressure on the sacrum ; he has tried to aid the patient by relieving the guts of the collected gases by introducing a high rectal tube, and has never had any trouble in introducing it high up into the descending colon.

The President said that he was of opinion that it was pressure on the ureter or irritation of the peritoneal surface. It is almost impossible to determine what is the cause of this condition. In the case of Dr. McLean he thinks there was some irritation, possibly from the handling of the intestines, as suggested by Dr. Brettauer, and possibly from mere exposure to air. In some cases there is present a tumor (?) that can be felt or outlined, and with it sharply marked prostration, and he calls attention to the fact that whenever there is a loop or bend around the intestine, or any obstruction to the intestine, there is generally very marked prostration. In the case of Dr. McLean, although the vomiting was present, the patient was not so very sick. If there is marked prostration there is generally some involvement of the intestine. The wisdom of the course the doctor followed is abundantly shown by the result ; but he can say also that unless that one symptom be well marked, one would be justified in such a case in opening the abdomen. In the case of Dr. Broun the emesis stopped on the fourth day after the packing had been taken out. If it is determined that it is due

to reflex irritation, the proper treatment, of course, is to relieve the reflex irritation, and since it is impossible to do that by giving medicine by mouth, it should be done by rectum. Another important point to be observed in connection with intestinal obstruction and such emesis is the action of the kidneys. He believes in those cases opiates should be used.

Dr. BROUN says that Dr. McLean's paper calls to his mind a case which occurred some time ago, where an abdominal section was done by a good operator. It was a long operation. Vomiting developed, and the operator being out of the city, he was telegraphed that the supposition was that there was an intestinal obstruction, and his reply was to operate. For some reason no operation was done until it was too late, and when the abdomen was opened, a sponge was found in it. In addition a portion of the intestine for some four inches had contracted until it was simply a cord.

Dr. MCLEAN said that he had practised the washing of the stomach before the violent vomiting ensued. He always uses it and recognizes its value, but it did not work in this case. The fæcal vomiting began in the night and continued for twenty-six hours ; it was an absolute emptying of the whole intestinal tract through the mouth. As to handling the intestines, he handled them less than in almost any operation involving a tumor anything like the size of this. He is very particular about that, even fussy about it, and read a short paper here a year ago in which he made an argument against the ruthless handling of the intestines and exposure to the air. It accounts for much of this trouble, but in this case they were handled very little. As to cathartics, none were used after the first attempt with the salines, nor did he use an opiate in this case. Some of the physicians insisted on trying calomel, but he forbade it. Why not operate when, in the face of all these things, the fæcal vomiting was so persistent and marked ? Simply because of the general history of the case, and it simply emphasizes what has been said here about fibroid tumors, that we are prone to look at these things with the eyes of specialists. The patient lay there in perfectly good condition, her pulse was good, there were no bad disturbances of the circulation, and *no collapse* whatever. He has never seen any kind of obstruction of the intestines which did not involve symptoms of collapse. That is the reason he did not operate.

Toxic Effect of Iodoform Dressings.

By Malcolm McLean, M.D.

(See page 249.)

Discussion.

Dr. Currier said that the chemical questions which had been brought out by Dr. McLean were interesting, and should call for comment and consideration. He could not for the moment recall the chemical reaction which should make the bichloride of mercury and iodoform incompatibles. Another fact which was peculiar was that while iodine was so readily tolerated by most persons in considerable quantities, especially in its salts, in such a form as this it should be so badly tolerated. A great difficulty which presented itself in connection with these cases which were sometimes diagnosticated as iodoform poisoning was the similarity between the symptoms as given by Dr. McLean and those that come from other causes—for instance, the symptoms which come from prolonged anæsthesia in very susceptible persons, or symptoms which may come in connection with tuberculosis, which renders the individual particularly susceptible to almost any form of poisoning. There was one point to which the paper referred—namely, the effect which iodoform had upon the skin—which recalled a case in which the speaker removed a tumor during the hot spell last August, a perfectly simple case of par-ovarian cyst in a young woman of exceedingly good condition. After about the fourth or fifth day she complained very much of irritation of the skin. The dressings were removed about the tenth day, and the entire area surrounding the wound, which had been covered by iodoform gauze, was the seat of a dermatitis, superficial but with an abundant formation of vesicles, and for about three weeks after that this gave her a great deal of trouble. In this case the condition was clearly attributable to the iodoform, but it is the one case which he has seen in which the iodoform poisoning was unmistakable. The case which he reported to the Society about a month ago, in which the cerebral symptoms were manifest, and which were removed when the gauze packing was removed, was certainly one which was very suggestive of iodoform poisoning, but he could not say absolutely and positively that that was the cause. Some links in the chain of evidence were wanting.

Dr. Broun said that he was greatly indebted to Dr. McLean for his description of iodoform poisoning. He had often wondered what the symptoms were.

Dr. Brettauer said that he had seen many cases of iodoform poisoning. In the early eighties, when iodoform was introduced into surgery, he was a medical student, and hundreds of pounds were used at the clinics. At resections of bones large cavities were filled with iodoform powder. It was taken as being entirely harmless, and many cases died an obscure death, until finally some surgeon wrote an article in 1884 or 1885 on iodoform poisoning. Then the surgeons became more careful and began to watch these cases, and the symptoms as described by Dr. McLean correspond exactly with those which other observers found—the appearance of cerebral symptoms, acceleration of pulse, absence of elevation of temperature, and sometimes a peculiar odor from the mouth, or, if there are wounds, from the wound. Since then he has seen a number of cases in his practice, and consequently has become very careful in selecting his cases. For instance, he never uses iodoform gauze in a puerperal uterus, or one which has just aborted. Formerly a ten-per-cent iodoform gauze was used, and he remembers three cases of distinct iodoform poisoning through strips put in a uterus which had just been emptied of a three-months' fœtus, where the iodoform was absorbed. He uses a one-per-cent. gauze which is prepared very simply by sterilizing plain gauze in water, letting it dry, and then putting it for a moment in a solution of one per-cent iodoform and ether.

Dr. Arthur M. Jacobus stated that he agreed with Dr. Brettauer that iodoform poisoning is more apt to occur when used in a uterus which has recently contained a fœtus and been emptied by labor, or by a miscarriage and curettage, but still it frequently occurs also when used in other cavities. For instance, recently he had had occasion to take out a tumor from the left labium majus, and which he thought would be a small affair; but instead he found it reached far up under the ischial ramus, and there was so much bleeding from the deep pocket that he packed it tightly with an abundance of iodoform gauze. The patient was semi-delirious (and in a low condition) for several days until he suspected the iodoform gauze and replaced it with borated gauze, when the condition of the patient cleared up at once. He did not expect to have any iodoform poisoning, because there was so much bleeding that he thought there would be little or no absorption, and espe-

cially as the gauze was not in the uterine cavity ; but, believing the symptoms of semi-delirium, weak, rapid pulse, nausea and vomiting were those of iodoform intoxication, he had acted accordingly, and with a prompt cessation of the symptoms. The patient was very anæmic, and probably was affected more readily than if she had been strong and full-blooded.

The President said that he believes so thoroughly in iodoform poisoning, and has seen so many people with it, that he does not use it in the uterus after curetting, or in abortions, or after childbirth. He never packed the uterus but once with iodoform gauze, and that he repacked after another gentleman had packed it ; he always uses plain gauze if he desires to pack. As regards the symptoms of iodoform poisoning as he has seen them, he would only add one symptom, and that is that the urine as a rule decreases, and by a very easily determinable chemical operation the iodine can be found in it. There is usually an irritation of the kidney, so that while the patient desires to pass water, she passes but little at a time. In two cases where he observed it he found instead the heavy, lethargic condition with prostration, there was great restlessness, jactation and tossing about the bed, whether due to the complication of the kidney he does not know.

Dr. McLean (in closing) said as to the symptoms being similar to those in ordinary cases, he never has seen any of his operative cases have similar symptoms to those which were observed in the cases described here. His patients come out of ether somewhere within twenty-four hours. This patient did not come out apparently ; she was completely intoxicated for four days. She had the trouble with her stomach, she had the disturbances of the cerebral functions, which are so marked as to be unlike anything he has ever seen in his operative experience. The trouble with the skin, which in some cases is confined to the face, was all over the body, and was very marked. The pupils in all the cases he has seen accorded with this case. They have been contracted, slow, sluggish, fixed, have not responded ; closing the eyes to the light, the dull, fixed appearance continued. Iodine is always found in the urine when iodoform is used. When he spoke of lethargy, he did not mean by that a tendency to somnolence by any means ; on the contrary, they do not sleep, but there is a lethargic inaction that does not respond in a sensible, clear way.

Official Transactions.

A. M. Jacobus, *Recording Secretary.*

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, January 15, 1897.

The *President*, ADDISON H. FOSTER, M.D., in the Chair.

Actinomycosis of the Left Mamma.

Dr. L. L. MCARTHUR : The patient presented this evening is a woman, twenty-two years of age, unmarried. She has always lived in Chicago, except one summer, about four years ago, when she lived on a farm north of this city. She had no manifestations of the disease until eight weeks ago. About eight weeks ago the patient accidentally discovered a small, flattened mass in the upper part of the left mammary region. The mass measured about 1 by 2 inches in area, was oblong in shape, free from pain, but tender to pressure. Two days later she consulted Dr. Abt, who subsequently referred her to me. The patient was anæsthetized, an incision was made over the tumefaction, and a small piece was removed for microscopical examination. This eventually proved to be normal mammary glandular tissue. The wound healed by first intention. Three weeks later the patient noticed a small discharge of pus from a sinus situated above the site of the exploratory incision. The discharge was thick and yellow, and at times mixed with blood. The patient was admitted to the Michael Reese Hospital on November 16, 1896. On November 17 she was anæsthetized, and a semicircular incision was made about the inner half of the left breast and the breast elevated. The pectoralis major and minor muscles were incised, and a dirty chocolate brown *débris* was found behind the mamma and under the pectoralis major. In it many minute yellowish granules were found, which under miscroscopic examination revealed the typical actinomycotic ray fungus. The walls of the cavity containing the *débris* were covered with numerous small sulphur-yellow colored bodies. The growth showed a tendency to spread after the operation. On December 8 a secondary operation was performed. The gland was almost dissected off, being left to hang on its outer edge, the necrotic *débris* curetted out, and the wound cauterized (actual) then left to heal by granulation. Since that time numer-

ous subcutaneous sinuses have appeared at different places near the edge of the wound, the discharge always containing the characteristic granules. In dressing the wound 95 per cent. carbolic acid was used for injecting into the sinuses, which checked the progress of the disease.

On January 15 the wound was found to be in excellent condition, covered with healthy granulations, rapidly healing, and the patient has gained twelve pounds in weight.

There was no history of any former inflammatory trouble, no abscesses in the neck, no decayed teeth, no pulmonary trouble, or symptoms referable to the mediastinum, and the question arose as to whether it was a new growth or a chronic specific inflammation—that is, tubercular or syphilitic. There is no family history of either tubercular or leutic trouble, hereditary or acquired.

Discussion.

Dr. Binkley : What is the origin of the infection ?

Dr. McArthur : I do not know. We have not been able to trace it. There was no external lesion to be found anywhere, no bronchial or throat trouble. I might say here that the patient has been under iodide of potassium treatment, which is the only known medication which seems to influence the course of the actinomycotic disease. Biological experiments have shown that the influence of iodide of potassium, introduced into the culture medium in which this organism grows, does not check the growth of the organism ; it seems to be resident in the protoplasm of the cellular tissues of the body, that enables it to react successfully against the attacks of actinomycosis.

Dr. Alexander H. Ferguson : I have never seen a case of actinomycosis of the breast. Such cases are extremely rare. I had one case of the disease which may be of interest to the Society ; it followed an operation for the radical cure of hernia. Some two years ago in using catgut in an operation for the radical cure of hernia the wound healed all right until about the third week, when a small sinus developed, and three weeks after that there was a fully developed pathological mass, presenting all the characteristics that have been shown this evening in Dr. McArthur's case. Microscopical examination revealed it to be actinomycosis. A secondary operation was done with a view of removing this mass. The abdomen was opened, we removed a large amount of omentum, and found that the disease had gone beyond the omen-

tum and implicated the bowels. The patient recovered from this operation, and left the hospital with the growth still in progress, went to the poorhouse and died there. This is the only case of actinomycosis I have ever had.

Dr. Weller Van Hook : I would like to ask Dr. McArthur whether he used potassium iodide in this case.

Dr. McArthur : Iodoform has acted better than anything I have tried. I have used iodine, carbolic acid, and iodoform, injected into the sinuses, and iodoform seems to act better than any of the others.

Dr. Van Hook : I have had one case of actinomycosis of the jaw, which involved the lower jaw up to the ramus, and extending along the fascial layers of the neck, the disease being so extensive that its complete extirpation was impossible. Iodide of potassium, given in as large a quantity as possible, did not influence the course of the disease, contrary to what is reported by European surgeons.

Dr. Ferguson : Iodide of potassium had no effect upon my case whatever, and I gave it continually.

A New Speculum.

Dr. Amos W. Abbott, of Minneapolis, Minn.: The instrument that I wish to present to you this evening is a self-retaining speculum, adapted for country practitioners or those who do not have an office assistant. It will take the place of a Sims speculum. I have given it a thorough test in operations upon the cervix, for vesico-vaginal fistula, curetting, dilatations, etc. It can be used with the patient in the knee-chest as well as in the dorsal position.

Multiple Myofibroma of the Uterus.

Dr. G. William Reynolds : This specimen was removed from a patient yesterday morning at St. Joseph's Hospital. She is forty-nine years of age, married, and has never borne children. This tumor was not noticed until about three years ago. Within the last six months its growth was so rapid that it caused the patient a great deal of distress, and she consulted Dr. Otto, who referred her to me. On palpation I found a large tumor extending about three inches above the umbilicus, quite movable, and non-fluctuating. On digital examination the mass extended to the floor of the pelvis. My diagnosis was multiple myofibroma.

I made the usual median abdominal incision, from a point about

2 inches above the umbilicus to an inch of the symphysis pubis. The tumor was readily delivered and the ovaries and tubes tied off on either side. The uterine arteries were then tied and the tumor amputated. The operation was bloodless. At the time of the operation the tumor presented the appearance of malignancy, and although it was originally a subserous myomatous growth, I believed at the time of operation that a transformation from a benign to a malignant growth had taken place, and thought it advisable to remove the ovaries and the uterus along with it by supravaginal amputation. If I were not suspicious of its having been a malignant growth I should not have removed either the ovaries or the uterus. There was very little shock following the operation. The temperature was a little elevated, perhaps 100½°, but I attribute the elevation of temperature to fermentation fever, considering that it occurred so soon after the operation. Had the temperature arisen a degree two or three days after the operation I certainly should have suspected infection, but this evening when I saw the patient the temperature was gradually dropping, and she was doing very nicely.

I used sterilized catgut for sutures and ligatures after the new formula given by Professor Senn (an improved Hofmeister's method of sterilization of catgut), which has been prepared by the Sisters of Charity of St. Joseph's Hospital. He has written an article on this subject, which was published in the *Journal of the American Medical Association*, December 12, 1896, p. 1219. The catgut is prepared and placed in a 4 per cent. solution of formalin, in which it is allowed to remain for forty-eight hours, after which it is placed in a running stream of water (sterilized) for twelve hours. Warm water is preferable. It is then boiled for from fifteen minutes to half an hour. Having gone through this process, it will kill any microbe or the spores of microbes that are known to exist. It is afterward preserved in absolute alcohol, to which is added 10 per cent. iodoform and 5 per cent. glycerin. I have used this preparation of catgut in three cases of hysterectomy without any septic infection following in any of them. I therefore feel that we have reached perfection as far as aseptic catgut buried ligatures are concerned, for we avoid the great bugbear that we meet with in using silk. If infection should occur, we do not have to wait for weeks and perhaps months until the ligature becomes detached before the fistulous opening closes. We are absolutely sure that it is aseptic, and it is perfectly pliable.

It does not lose any of its strength, and you may use as much force as you wish in tying it and you cannot break it. It is as strong as silk.

After removing the tumor I amputated at the internal os, covered the stump with peritonæum, and sutured it to the broad ligaments on either side, in order that the patient might not in the future be the victim of cystocele, proctocele, or the unpleasant after-effects of these operations which sometimes occur. In closing the abdominal wall I used four rows of sutures : First, catgut to close the peritonæum ; second, silkworm gut inserted down to the peritonæum, but not into the peritoneal cavity ; third, catgut to suture the external oblique fascia ; fourth, after tying the silkworm gut sutures I used horsehair to approximate the skin.

Dr. Weller Van Hook : If any one tries to sterilize catgut by Hofmeister's method, let him be sure that the water is boiled before the formalin is added, otherwise the catgut will sometimes be spoiled because of the collection of oxygen bubbles on the surface of the catgut. As the water gets warm the oxygen is separated from it, thus keeping the formalin away from the catgut. The water should be boiled beforehand in order to drive the oxygen away. This point is mentioned because not referred to by some American writers who have dealt with the subject.

Dr. Reuben Peterson : If I understood Dr. Reynolds correctly, he said he suspected at the time of the operation that the tumor was malignant, and that subsequent microscopic examination has proved this to be true.

Dr. Reynolds : I said macroscopic examination.

Dr. Peterson (continuing) : As I live outside of the city I do not have an opportunity to see much of the work of the different gynæcologists in Chicago. I could not exactly get the drift of the doctor's argument for doing a supravaginal amputation of a uterus that he suspected to be malignant. Under the circumstances I should think it would be a better plan to also remove the cervix. I judge from the doctor's further remarks that the reason he did not do so was his fear that subsequently the patient might have rectocele or cystocele.

My experience with hysterectomy for uterine fibroids is limited. I have only operated upon twelve cases, but I have been able to follow the after histories of these cases very accurately, although a period of over four or five years has elapsed since the operation was performed in some of the cases. I have not as yet

encountered a case of cystocele or rectocele, and in eight of the cases I removed the entire uterus, cervix and all. I always employ this method because it establishes better drainage, and one of my reasons for removing the cervix is on account of possible malignancy which may follow at the age in which these tumors are usually removed.

I was also interested in the doctor's method of suturing the abdominal wound. I cannot see the reason why silkworm gut sutures should be passed down so far and then tier sutures used, because microscopical examination has shown that infection comes from the skin, and that it is liable to travel down the suture, and in that way infection of the deeper structures is more apt to arise than if the tier suture had been used and silkworm gut or horsehair for the skin.

Dr. T. J. Watkins: I would ask Dr. Reynolds if the catgut swells much in this process of preparation. At St. Luke's Hospital experiments with the method described by Dr. Senn have been made, and the catgut has swollen. Why is the catgut placed in running water for so long a time? What would be the objection if some of the formalin was left in the catgut, as formalin is a strong antiseptic? Is ordinary hydrant water used?

Dr. Ferguson: Is the catgut tested bacteriologically before it is used for surgical purposes?

Dr. Reynolds: In regard to catgut, I believe those who have been experimenting, as Dr. Watkins says, at St. Luke's Hospital, made a mistake in not winding the catgut sufficiently tight. It should be wound tightly on glass tubes, one layer only, and tied tightly at each end. If it is not tied tightly it will certainly swell. We have made bacteriological tests before using the catgut, and have found it sterile. In no case have we had infection following its use. We always use sterilized warm water during the process of washing the catgut. The formalin hardens the gut, and if any spores should remain in the catgut they are developed into pathogenic microbes while in the running water, and then are afterward destroyed by boiling. I do not know but formalin might have a deleterious effect upon the tissues. Dr. Senn's idea in using iodoform instead of carbolic acid or bichloride of mercury is that it has a less irritating effect upon the tissues, which I believe to be true.

Dr. Henry P. Newman: How do you get your warm, running, sterilized water?

Dr. Reynolds: We have a large reservoir connected with the boiler in the engine-house of the hospital, and this is kept full.

Dr. Newman: Is the catgut being prepared constantly?

Dr. Reynolds: Yes. In regard to Dr. Peterson's remark as to why silkworm gut was used, if I understand him rightly, he thought there was danger of silkworm gut being introduced down through the skin to the peritoneal cavity. For that reason alone I introduced the silkworm gut down to but not into the peritoneal cavity. The peritonæum is closed with sterilized catgut, and silkworm gut sutures are used to close the muscles, the fascia and the skin, but the sutures do not enter the peritoneal cavity. The fascia is again sutured separately in order to secure adequate union. I did not remove the cervix, for the reason that I thought I had reached the limit of the disease. If the tumor was a sarcoma, as I had suspected, it is not likely that it would implicate to any very great extent the cervix, as we know that sarcomatous growths do not, as a rule, follow the lymphatics, but may follow the venous circulation. I am satisfied the tumor will not recur in the cervix, but it may do so by metastasis in other parts of the body.

Dr. M. L. Harris: In answer to Dr. Watkins's question with regard to placing catgut in formalin solution, I will say that the method which Dr. Senn described was devised and developed by Hofmeister. The object of placing catgut in formalin solution is for the peculiar and specific property which the formalin has of rendering the catgut insoluble in hot water, and thus permitting it to be boiled. The formalin is not used on account of any antiseptic property which it may possess, nor to render the catgut sterile, but is employed entirely for the peculiar property which it has of rendering gelatinoid substances insoluble in hot water. It is then permitted to remain in running, ordinary faucet water. It has been shown that if catgut be allowed to remain in contact with formalin beyond a definite length of time, the formalin spoils the catgut; consequently it is placed in running water to remove all the formalin from the catgut. After this stage the catgut may be permitted to remain almost indefinitely before being sterilized. It need not be sterilized at once, although it is better to do so. When I say an indefinite time I mean several days or a month. After the last traces of the formalin have been removed, the catgut is then boiled, and it stands the temperature of boiling water by virtue of the change which has been wrought by the formalin.

The sterilization is due entirely to the boiling. The catgut may be boiled more than once. If it should become soiled after the first boiling it may be reboiled. It will stand reboiling a number of times, but not indefinitely, because after two or three boilings the tensile strength of the catgut is diminished.

After being sterilized by boiling the catgut should be preserved in some antiseptic solution, such as alcohol, glycerin, bichloride of mercury, etc.

Extra-Uterine Pregnancy.

Dr. Martin W. Bacon (present by invitation) : This is a specimen of extra-uterine pregnancy which was removed on the 4th of this month. It has some points of more than ordinary interest ; first, it was located a little differently from those we ordinarily find ; and second, the symptoms were somewhat obscure. The patient was a woman, twenty-four years of age, and had been married three years. Menstruation began at the age of thirteen and a half years, had always been regular but painful, and lasted one or two days. Her last menstruation occurred on October 1. The following menstruation was delayed five days, when it suddenly appeared at breakfast-time, but was not accompanied by more pain than usual, but she thought the pain was a little more severe than usual. There was a very slight but continuous flow from that time until the expiration of five weeks, when I first saw the patient. By as careful an examination as I could make under the circumstances I failed to detect any enlargement, although the patient would not submit to a very careful and thorough examination. I asked the privilege of putting her under an anæsthetic to complete the examination, and the next day, the 16th, under complete anæsthesia and perfect relaxation, I was unable to detect any special enlargement of either tube or ovary, but it seemed that the left ovary was a little enlarged, but not enough to be appreciated. After examination under the anæsthetic I was somewhat disposed to change my first diagnosis of probable extra-uterine pregnancy. I cleaned out the uterus with a dull curette carefully and removed what looked like placenta membrane, but which later proved to be deciduous. There was no reaction from the operation. The flowing ceased for about four days, when it again continued as before. At this time she suffered a little pain, but from any of the statements I could get from the patient she had at no time well-marked pain. This slight pain continued

until the last day of the month. On December 31 she was taken with a somewhat characteristic and severe pain. I was away at the time, and another physician was called, but I saw the patient early the next morning. At that time the tumor could be easily mapped out, and I asked Dr. Watkins to see her with me. She was taken to the hospital the next day, and operated on January 4. The tumor was located at the extreme end of the tube. All of the ovarian tissue which was found upon that side was incorporated in the tumor. The tube is patent, one end of it being clamped off.

There was one peculiarity about this case. The other tube was attached very firmly to the right ovary and distended with about one half ounce of bloody serum. The adhesions were so dense that it was not possible to separate them without tearing the ovary. We incised the tube, stripped it very carefully, leaving an opening, and stitched the mucous surface to the peritoneal surface at the end of the tube, as the patient refused to submit to any operation which would remove both.

I have had some microscopic slides made from the section that was removed, but the microscopic report does not throw any light upon the subject. The slide shows an ordinary cyst wall of fibrous tissue with a very abundant supply of blood vessels. A small fœtus can be seen in the centre of the mass. The ovary is spread out over a part of the mass. Part of the wall seems to be firmly organized blood clot.

Syphilitic Osteochondritis.

Dr. Karl F. M. Sandberg : I have here a few sections of bones of a syphilitic fœtus showing syphilitic osteochondritis. They are sections of the femur and of the upper and lower extremities of the humerus. They show the characteristic broad high-colored demarcation line between the bony part and the epiphyses.

A Case of Beginning Tuberculosis of the Mesenteric Lymph Glands Revealed by an Exploratory Cœliotomy.

By Reuben Peterson, M.D.

(See page 317.)

Tubal Pregnancy.

Dr. Peterson exhibited the following specimens and related their histories :

Mrs. K., aged thirty-four, married seven years, never preg-

nant. During the past few years the patient has had pain in the lower abdomen, and other symptoms indicative of chronic disease of the appendages, but has led an unusually active life until last March, when, after missing one menstrual period, she was seized with a sudden sharp pain in the left pelvis, and was confined to the bed for five weeks with extreme abdominal tenderness accompanied with tympanitis. She recovered very slowly from this attack, and continued to suffer from an intense backache and pain and tenderness in left side, which led her to consult me. Examination showed an extremely tender mass, the size of the fist, attached to the left side of the uterus and lying upon the floor of the pelvis. As the patient was extremely anxious to avoid an operation, she was treated at the office for a number of weeks with ichthyol tampons, with a perceptible diminution in the tenderness of the mass, but no perceptible decrease in its size. As the patient's general condition was not improving, and as she was prevented from following her occupation, operation was advised and accepted. Operation, December 22d, at Butterworth Hospital. Upon opening the abdomen the mass in left pelvis was found to consist of a tubal gestation the size of a hen's egg everywhere adherent to the intestines. The mass was only enucleated after a tedious dissection, and with the aid of Trendelenberg's position. The right tube and ovary were adherent and prolapsed. The fimbriated extremity was non-patent, and as the patient had requested that she be made well at all hazards, these were removed. The abdominal incision was closed with catgut for the peritonæum and facia and silkworm gut for the skin. No irrigation or drainage was employed. The patient has made an uninterrupted convalescence, and is now up and around the hospital, and will be discharged in a short time.

The only point with reference to the operation which is particularly interesting is in regard to the route which was chosen in this case. This was a typical case of extra-uterine pregnancy which was not being absorbed, and it would have been impossible to have enucleated the mass through the vagina, even if the proper instruments had been used and great skill had been displayed in the operation, because the bowels were very adherent to the mass, and it was only by means of the most delicate manipulation, by the use of the Trendelenberg position, that the adhesions were separated without endangering the integrity of the bowel wall.

An Imperforate Uterus.

The next specimen I show you is a rather unusual one. This uterus, tubes, and ovaries were taken from an old woman about seventy-five years of age. She died from some obscure pulmonary trouble, and the hospital's pathologist (Dr. Whinery) made an autopsy, removing the tubes and ovaries for examination. After their removal he made a section in order to open up the canal, and found, much to his surprise, an almost solid uterine body. The cervical canal was less than an inch in depth, as you will see. The right tube is impervious to the probe. The other tube is patent, and a probe can be passed down to the uterus when it strikes this solid body. Microscopical examination of the body shows that there is no gland tissue there ; while a similar examination of the closed tube shows that the tubular elements are present, but that the tube is impervious. The explanation of this strange condition must be that the central wall, formed by the coming together of the ducts of Müller in early fœtal life, failed to be absorbed in the upper portion of the uterus and a solid body resulted. The history we obtained afterward from the members of the family was that this woman had a "show" at the usual time, when thirteen or fourteen years of age, but only once or twice, and nothing had been seen since.

Gangrenous Appendix Vermiformis.

Dr. Peterson : Mr. O., aged seventeen, a patient of Dr. Gauntlett, Elk Rapids, Mich., who was first called to see the case, December 14th, 1896. He found the patient with a temperature of 102.5°, pulse 120. Abdomen swollen and tender, especially over McBurney's point. The boy had received a severe wrench of the right side while shoeing a horse five days previously. There was severe pain and tenderness in region mentioned for three or four days, but he did not give up work until the day preceding the doctor's visit. Happening to have at this time an operative case at Elk Rapids, I was asked to see the case, and, fully prepared to operate if necessary, drove in company with the doctor twelve miles to the patient's house. During the twenty-four hours since the doctor's visit the condition of the patient had markedly improved. The bowels had moved freely from the cathartics administered, the abdomen was flat, the temperature and pulse normal. There was, however, an area of decided dul-

ness in the region of the appendix, and a rectal examination showed decided tenderness in the left pelvis. Because of the distance of the patient from medical aid, and the severity of the previous symptoms, an operation was advised and accepted. As aseptic an operation as possible was performed in the midst of the most undesirable surroundings and in a poorly lighted attic.

Gangrenous Appendix Vermiformis.

The abdomen was opened with a three-inch incision parallel to Poupart's ligament. The presenting bowels as well as the adjacent peritonæum were found to be deeply injected. The appendix was found deeply situated in the pelvis, and upon breaking up the slight adhesions surrounding it pus oozed up into the abdominal incision. As the appendix was drawn out of the incision upon the abdominal walls two fœcal concretions popped out of a gangrenous area which was on the point of rupturing. Pus escaped freely from this opening. The base of the appendix was ligated with silk and the organ removed. The stump was covered with peritonæum and dropped. The abdominal cavity was washed out with large quantities of boiled, strained water and a gauze drain

inserted. The incision was partially closed with interrupted silkworm gut sutures.

In a letter recently received from Dr. Gauntlett it is learned that the patient has made a good recovery. The gauze was removed in four days, and the wound is gradually healing from the bottom.

Discussion.

Dr. Alexander H. Ferguson: With reference to Dr. Peterson's paper, the surgical procedure that has been performed by Lauenstein, if I remember rightly, is the removal of the retroperitoneal glands by making a large U-shaped incision and raising the abdominal wall, and then removing the tubercular glands situated retroperitoneally. Some time last spring I operated on a case which I supposed to be one of chronic appendicitis. I found a cordlike vermiform appendix with slight pathological conditions situated in and around it. The retroperitoneal glands were greatly enlarged and tubercular in character, which probably had given rise to nearly all the clinical features of the case. I extended the incision, removed a dozen of these glands on the right side retroperitoneally, and I could feel that there were some enlarged glands on the other side, but these were not so markedly enlarged as those on the right side. The young girl made a beautiful recovery. I advised a second operation, but she improved so much and is now in such an excellent condition that she would not undergo a second operation. When we remove tubercular glands on one side of the neck and leave them on the other side, if we resort to constitutional treatment after the first operation, it is sometimes not necessary to operate on the other side, for the reason that there is a tendency on the part of nature to throw off the disease. It may be so in this case.

Recurring Appendicitis.

Dr. John T. Binkley, Jr.: I want to occupy the time of the Society for a few minutes in speaking of some interesting cases of appendicitis. A few months ago I reported a case of recurrent appendicitis. A year had elapsed from the time the first operation was done, in which the abscess was opened and drained. Hernia resulted from this case from delayed union of the parietal walls, but the patient did not consult me on that account. He had a recurrent appendicitis. Upon making an incision through

the thin wall of the old scar, the appendix, normal in appearance (excepting much enlarged), was found under the incision. I examined the specimen to see if there originally was an opening in the appendix, because at the time of the primary operation there was an abscess cavity. If there was a perforation of the appendix, I could not find evidences of it, and the appendix was much the same as we find in a catarrhal condition.

Last evening I operated upon a patient upon whom I had operated three years ago with the assistance of Dr. Daniel Nelson, and the present attack recurred six or eight days ago. The patient was brought into the hospital with a temperature of 103° with the same general history as before. Originally there was an abscess which I had drained from the flank by means of through and through rubber tube and gauze drainage, and the patient lived comfortably until the present time. This patient also had a small hernia. The scar was thin, and this specimen shows you the condition of the appendix, which I found curled up under the colon. The distal extremity of the appendix lay just where my posterior drainage went the first time. I first encountered the omentum, which was attached to the parietal peritonæum all around the original incision, and had become stretched and formed a hernial mass. This I dissected away, peeled it off from the parietal peritonæum, and removed a mass as large as my hand. I packed around my incision, looked down close to the side of the wound, and saw a discolored mass which I could not at first recognize, lying under and to the right side of the head of the colon. I thought at once that I had found the mass containing the appendix, and by pushing my finger close to the abdominal wall I could slip my finger down under the mass and loosen up the adhesions the same as in a case of pus tubes. I then split it away from the head of the colon. I found, as you see, about one inch of the proximal end of the appendix was normal in size. I packed off all around this area with iodoform gauze, so that I could get a field in which to work, and to prevent the contents of the sac from entering the peritoneal cavity in case of rupture. This precaution was well taken, for I unfortunately ruptured the sac, and from it came half an ounce or possibly more of a thick, grumous fluid, such as we frequently see coming from dermoid cysts. The odor was foul and characteristic of bowel infection. I finally delivered the proximal half of the appendix, which you see toward the mouth of the bottle, and in going a little higher up and more

under the colon, I removed a second piece, the enlarged and gangrenous distal extremity. The appendix which you see was shelled out of a mass of plastic lymph, and is the result of the operation. I found the distal extremity lying at the point at which the tube had perforated the flank posteriorly. The manipulation required, and the extensive dissection I had to make with my finger to loosen up this mass, induced me to again insert a drainage tube in the flank.

I have had two cases of recurrent appendicitis occurring in my own practice, in both of which I have been able to get the appendix a second time, which I did not find during the primary operations, for the simple reason that I did not feel like making a thorough search for them.

The first case made a perfect recovery.

Upon reviewing this paper, ten days after operation, I am able to report the second patient in splendid condition.

A Report upon Thirty Cases of Pelvic Inflammation Operated upon, between July 1, 1895, *and July* 1, 1896, *by Vaginal Incision and Drainage.*

By Amos W. Abbott, M.D.

(See page 285.)

Discussion.

Dr. E. C. Dudley: The essayist is to be congratulated, first, upon having given us a very instructive paper; and, second, upon the excellence of his results. A sharp therapeutic distinction should be made between the two forms of sactosalpinx—hydrosalpinx and pyosalpinx. Hydrosalpinx is a less strong indication for radical operation than pyosalpinx. When the diagnosis of hydrosalpinx can be made, the removal of the serum by aspiration may be followed by restoration of the functions of the tubes—*i.e.*, it may be followed by the reopening of its lumen. This would hardly take place when the occlusion had been due to strong adhesive inflammation. It would only be possible when, as often occurs in hydrosalpinx, the adhesions are very weak, or when the occlusion is due to the swelling of the mucosa. Vaginal aspiration of hydrosalpinx, followed by efficient local massage, after the Brandt method, and by such systemic treatment as will increase the patient's resistance to infection, may result in cure.

The results of Landau and others in Europe, and of Henrotin, Abbott, and others in this country have made incision and drainage for pyosalpinx as a recognized procedure. The operation, however, even though it produces a systemic cure seldom restores the functions of the tube, but rather produces complete obliteration of its lumen, thereby converting it into a cord. This is the same result which occurs spontaneously in recurring appendicitis, usually called appendicitis obliterans. It is well known that chronic suppuration of a mucous membrane, even though drained, is most intractable. On the other hand, a parometric abscess surrounded by cellular tissue when emptied naturally closes spontaneously ; hence we may expect more prompt and more permanent results in the cellulitis abscess than in pyosalpinx. I have repeatedly incised and drained, however, both forms of abscess, and, so far as observed, with very satisfactory results in the majority of the cases. Failure, however, will occasionally occur. Two weeks ago I operated in a very acute case, and removed by vaginal incision a very large quantity of pus which contained gonococci in abundance and a few streptococci. The patient is not doing well. Her temperature to-night is 104°, and pulse 125. I am afraid that I shall have to open the abdomen after all and remove the appendages.

Unfortunately we do not yet know how to draw the line between those cases in which vaginal incision and drainage is adequate, and those in which a complete cure cannot be obtained short of the radical removal of the uterine appendages. Thus far, however, we must admit that we have been removing the appendages in some cases when vaginal incision and drainage would have been quite adequate. It may never be possible usually to make the distinction before operation. Possibly the future practice may be, first, to drain through the vagina ; and, second, to do the radical operation for those cases in which that drainage has proven inadequate. The essayist excludes the radical operation for tuberculous tubes. Will he kindly inform us how he makes the diagnosis of tuberculous tubes before the operation, and how does he know that the tubes which he drains through the vagina are not tuberculous? In very many cases pyosalpinx is tuberculous. If he is to reserve tuberculosis for the radical operation he must make a differential diagnosis beforehand. I think that all cases of sactosalpinx operated upon by any method should after operation or during operation be subjected to bacteriological

examination. It goes without saying that an infected uterus should be given an efficient sharp curettage before the operation is carried to the uterine appendages.

In this connection a certain question arises which, perhaps, some of the enthusiastic hysterectomists may be able to answer. The removal of the uterine appendages, especially if the tubes be taken off close to the uterus, almost always puts an end to the physiological functions of the uterus. Now pathology is only physiology modified by disease ; hence, it is a fact that in the vast majority of cases pathological processes in the uterus are interrupted by the removal of the appendages. The same result is also observed as a consequence of the normal menopause—*i.e.*, the menopause, whether artificial or natural, tends to cure inflammation of the uterus. The ultra-hysteroctomist declares that when the appendages are removed for septic diseases the uterus becomes a pernicious, pestiferous nuisance, and ought therefore to be removed in every case. Surely obliteration of the tubes—*i.e.*, their physiological removal, which results from incision and drainage of pyosalpinx, ought to be quite as clear an indication for the removal of the septic uterus as the anatomical removal of the appendages. Indeed, the indication, if there be one, for its removal should be even stronger when the tubes are only obliterated than when they are actually taken away, because in obliteration of the tubes the vascular, lymphatic, and nervous connections of the uterus still remain. These, I have just explained, may still preside over its physiological functions, whether those physiological functions be simply physiological or whether they be modified by disease, and therefore pathological. But notwithstanding this stronger indication for hysterectomy, we find that after obliteration of the tubes the once septic uterus usually does no harm. If this reasoning is correct, the uterus is removed too often. Let us not remove the uterus simply because of a certain prejudice against it. There is a classical surgical maxim, "Save what you can."

Vaginal incision and drainage is a reversion to the method of twenty years ago—a method condemned and until recently supposed to be obsolete. Its revival with improved technique and antisepsis now promises in many cases very permanent and useful results. The operation, although in principle more simple, is yet more difficult to perform. It takes a better man to do it well than to open the abdomen and remove the appendages. The great

objections to the operation are: First, the occasional difficulties of hæmostasis. Second, the increased danger of perforation of the bowel. I have recently had two cases of perforation coming on several days after the operations. Third, the difficulty and sometimes impossibility of doing thorough work in the dark. One should always be prepared, if necessary, to open the abdomen. It will not be time to dogmatize on either side of this question until we know more of the ultimate results of the vaginal incision and drainage.

Dr. L. L. McArthur: I wish to say that Dr. Abbott has furnished a conclusive answer to the question as to the removal of the uterus and the rest of the pelvic organs when the ovaries are at fault. He demonstrates positively the value of the swing of the pendulum to the vaginal rather than the abdominal route, in pointing out that of the secret of success of all the vaginal operations is drainage.

When presenting the specimen of myomatous uterus the question as to why Dr. Reynolds did not remove the uterus entirely instead of leaving a portion of the cervix was commented upon, and the remark was made that if he had removed the rest of the cervix he would have established better drainage. The trend of operations per vaginam rather than through the abdominal wall has, in my opinion, been wholly incident to the better results obtained, not from the fact that they operated through the vagina, but because they thus provided ample drainage. The cases presented to-night show that drainage in this situation is sufficient in the majority of acute inflammatory processes in the pelvic organs to induce a subsidence of the inflammatory process. I, for one, am heartily in favor of surgery in the removal of tissues or organs that are hopelessly diseased, but in removing organs that are not diseased I would say no.

Dr. Christian Fenger: I was glad to hear Dr. Abbott's paper, because vaginal incision and drainage for pelvic abscesses is a method I have employed in a great many cases, and with the other speakers I am disinclined to remove a uterus that is not hopelessly diseased. I have only met with one case where I was obliged to remove the uterus for inflammation. In this case I removed the tubes first, and the inflammation extended to the horns of the uterus, so much so as to necessitate three or four months afterward the removal of the uterus. I have never had occasion to remove the uterus in peri-uterine inflammations, and whenever I can

reach the pyosalpinx or its cavity from below I prefer the vaginal to the abdominal method.

Dr. DUDLEY : I would ask Dr. Fenger if he has not encountered cases where the suppuration and involvement were so great in operating from below that he had to go in from above.

Dr. FENGER : Yes, in cases that I could not deal with successfully from below.

Dr. DUDLEY : I would emphasize the fact that we sometimes go in from below, and then find that we have to open the abdomen in order to make a thorough operation.

Dr. FENGER : Or *vice versâ*.

Dr. T. J. WATKINS : I have been exceedingly interested in this paper. Dr. Abbott deserves praise for his original work, and congratulations upon the results which he has obtained. A year ago last June I reported before this Society nineteen cases treated by vaginal section and drainage. I reported that three of them continued to have some thickening in the region of the abscess that might necessitate a secondary operation, but perfect recovery has resulted without operation.

I also reported that two of the patients had sinuses. One of these was cured by vaginal drainage, and is now perfectly well. The other patient has had an abdominal section made. I found papillo carcinoma of both tubes. The disease has not recurred, and the patient is now well. Since June, 1894, I have operated at least twenty-five cases of pelvic suppuration by vaginal section and drainage. There have been four deaths, but all of the fatal cases had general peritonitis, and I feel quite certain that they would have died, whatever mode of treatment had been practised.

I have been much interested in the paper Dr. Frankel has recently published. In three years' work he has removed the appendages only about fifteen times for suppurative disease, and he never removes them without first attempting to cure the patient by vaginal section and drainage.

It would seem, as Dr. Dudley has said, that with vaginal section and drainage small pockets of pus are left unopened ; but the very smooth recovery from the operation, and the very few relapses after the operation would indicate that this objection is more theoretical than practical. In many of the chronic cases the pus has probably become sterile, and the small amount of it left may do no harm. I think we can follow this procedure now better than we could a few years ago. Then we thought it was very

important not to allow any pus to come in contact with the tissues ; now we do not fear contact of pus if we provide for free drainage.

Whenever the abscess is on the floor of the pelvis, I invariably prefer to make a vaginal section, but always have the patient prepared for an abdominal incision to be made at the same sitting if I find satisfactory work cannot be done through the vaginal incision.

Dr. E. C. Dudley : I desire briefly to recur to a case in point. About two months ago a friend of mine opened a pelvic abscess through the vagina. The patient did not do well. Two weeks later, in consultation, I enlarged the original incision and opened another still deeper abscess. After this the patient did well for a week. Then there was further evidence of suppuration. The doctor, who was an excellent operator, opened the abdomen near the pubes in front of the uterus, and established through and through drainage from the abdominal wall into the vagina. In a few weeks the patient recovered and considered herself quite well. Last week, however, I again saw her in consultation. The temperature was high, and there was further evidence of suppuration. I found a mass in the region of the *appendix vermiformis*, made an incision directly over it, evacuated another pus cavity, and drained. The patient is now making an excellent recovery. This last abscess was undoubtedly due to appendicitis. This was probably the original source of inflammation. The case illustrates the fact that we must sometimes follow up these abscesses and evacuate them as they appear.

Dr. John T. Binkley, Jr.: As I am down on the programme to defend the subject that, "when operating for septic pelvic disease and removing the ovaries, it is usually advisable to remove the uterus also," and reference has been made to it pointedly in connection with the discussion to-night, there are one or two points I want to refer to. I am glad to hear the evidence presented by Dr. Abbott and other men, for the reason that I profit by what they say. I think, however, that Dr. Dudley, in discussing Dr. Abbott's paper, first objects to the method outlined, and then finally winds up by lauding it.

Dr. Dudley : I made no objection to the method at all.

Dr. Binkley : I must have misunderstood you then. Dr. Dudley refers to the hysterectomists, and also rather deplores that we have reverted to this method of draining pelvic abscesses after twenty years. Everybody present knows that after twenty

years, or even ten or five years, we have learned from our manipulations from above the anatomical and pathological positions taken by these various abscesses in the pelvis, and that we can therefore much more intelligently go in through the vagina and locate and open these pus cavities. We know just how far we may go with our forceps or fingers to break down these pus pockets, and if we have learned from our operative work from above what we may do, we have gained that much, so that we may revert to the method of vaginal incision and drainage with greater freedom and ease than we could have done at an earlier date. Our operations by this method can be made much more radical. We not only are able to drain an abscess cavity on the side, which may be tubal or tubo-ovarian, or an abscess which has ruptured through the ovary and wall of the tube into the cellular tissue, but we are also able to pass a drainage tube and gauze up against the side of the uterus, and establish free drainage, draining the lymphatic system of the pelvis entirely, in *all* directions and from *all* the organs ; whereas, ofttimes in opening the abdomen for the purpose of removing the tubes and ovaries we do not have the advantage of drainage. If drainage is properly applied in these abscess sacs, it will not only drain the tubes, the membranes and lymphatics around them, but also the *uterus.*

Another thing : When operating for septic pelvic disease it is necessary sometimes to remove the uterus along with the tubes and ovaries, because the infection may pass from it and reinfect other tissues. Frequently in dissecting off the tubes we leave broad areas of exposed surfaces on the uterus to which the viscera may attach themselves. We also frequently leave the uterus without lateral support, and it may become displaced laterally or retrodisplaced, so that it is a useless organ, and if the septic disease has existed in the tubes and ovaries, or a tubo-ovarian abscess is plastered down on to the uterus, and it is one side of the abscess wall, I see no good argument in favor of leaving the uterus. I expressed myself in regard to this subject some time ago, and having read the literature thoroughly upon the subject, I find plenty of support for the removal of the uterus at the same time with the pus sacs in septic pelvic disease, and my results have been so much better that I still continue it more or less. Up to the present time I have made a few vaginal incisions and resorted to drainage in these cases. I have employed a method of keeping open my drainage below, by taking a rubber tube larger than this

pencil, an inch and a half in length, splitting it and making a ring of it, sewing the ends together, slipping the ring up into the opening. It rests there by a flange on either side of the rubber tube. It is easily kept open. It keeps up good drainage after the gauze has been removed, and you can allow free drainage of the canal until the cavity collapses.

Dr. Fenger says that he has found pus in the horns of the uterus necessitating a subsequent operation and removal of the uterus. If the pus is found in the horns of the uterus, why would it not be in the lymphatics of the uterine body? Of course no man can take a stand and be directly opposed to methods which our older and superior operators are advocating. He cannot do it in the face of such opinions, but the reasons which I have given I think are well taken.

Dr. Henry P. Newman: I have been very much pleased with the tabulation of cases presented by the essayist, also his good work and his excellent results. In the main, I am of the same opinion that he is in regard to these cases; at the same time, it is, perhaps, unfortunate to array one of these methods against the other—that is, to go on record as either a vaginal sectionist or an abdominal sectionist. In surgery of the pelvis we should follow the general rules that govern us elsewhere. Whenever we have a pus cavity to deal with, we should attempt to get at it in the most rational manner, resorting to such methods as will insure the greatest safety, preservation of structures, and the best permanent results. In my own work I have always aimed to have the patient prepared for an abdominal section in connection with the vaginal exploration, and I believe this is good practice in all instances, so that when unforeseen complications arise the combined method may be used. Each case is a law unto itself, and I believe it should be treated on its individual merits. I have had many recoveries from vaginal incision and drainage; I have had other cases less fortunate when I was unable to obtain consent for secondary operations. I was prohibited from entering the abdominal cavity from the start. I consider these cases unfortunate, and they not only bring the operation into disrepute, but the operator also.

One word in regard to curetting. If I understood the doctor rightly, he did not curette in many of these cases. I should feel it obligatory on my part to curette in all instances. As to the point of incision or section, I should not confine myself to the pos-

terior cul-de-sac entirely, but be governed by the accessibility of the pus sac.

In reference to Dr. Dudley's point, that the success of this procedure is an argument against extirpation of the uterus whenever the appendages are removed for suppurative disease, we should bear in mind that in the one case we have the organ with its function unimpaired, while in the other, after removal of the ovaries and tubes, the recognized function of the uterus is lost, and with it a possible factor in physiological restoration. For other reasons I am not an advocate of invariable removal of the uterus when the ovaries are to be taken out.

Where the primary operative procedure has been done through the vagina, and a secondary operation by way of the abdomen becomes necessary, instead of adding to the difficulty or seriousness of the laparotomy, I believe it is less difficult and less serious. If the abscess be properly drained it will relieve a great deal of the plastic exudate present, as well as the adhesions that primarily form seriously involving important viscera ; consequently I believe that in doing the secondary operation through the abdomen there is less danger and less liability of mutilation—that is, in acute inflammatory conditions, simple drainage through the vagina may often save life and valuable organs, which in the immediate laparotomy would have been sacrificed.

Dr. Joseph B. Bacon : I am very glad to have heard this up-to-date paper, and I have one case to report which I think is interesting in connection with it. About two years ago a case was referred to me of stricture of the rectum at the junction of its middle and upper third. After thoroughly examining the patient I saw that it was not an ordinary stricture, but a constriction of the rectum due to adhesive bands, resulting from pelvic inflammation. There was quite a mass of fibrous tissue extending down between the rectum and vagina ; the uterus was immovable, fixed by adhesions, and the whole floor of the pelvis was a mass of inflammatory exudate with adhesions. There was a history of pelvic abscess some years previously, the abscess having ruptured into the rectum. There was no fluctuation in the left tube ; it was painful, and the patient had been having a rise of temperature, chills and fever for some weeks. On the right side of the pelvis there was distinct fluctuation ; the tumor extended on the right side in the median line above the pubes almost half-way to the umbilicus. The patient was taken to the Charity Hospital, and two competent surgeons saw the case in consultation with me.

They advised vaginal incision and drainage of the fluctuating abscess in the right side.

Fortunately I was not accustomed to treat pus tubes or pelvic abscesses by vaginal drainage, and determined not to begin with this case, where the swelling or tumor extended so high above the pelvis. I opened the abdomen in the median line, and found the following conditions present : The tumor above the pelvis proved to be caused by firm adhesions of a loop of the ilium and a broad band of omentum to the anterior abdominal wall. Following these structures down they were also adherent to the right side of the bladder and the peritoneal covering deep into the right side of the pelvic floor. The right Fallopian tube was not to be found, only a thin band of peritonæum indicating its original location. The right ovary was firmly adherent to the peritonæum over the side of the pelvis. The fluctuating tumor proved to be due to the loop of ilium that was covered over by the end of the great omentum, both being firmly bound down to the pelvic floor with old adhesions.

The left side contained a pyosalpinx that was causing the temperature and pain. The uterus was firmly attached to the rectum, and the Douglas pouch obliterated by inflammatory adhesions that could not be separated. With the patient in the Trendelenberg position, I called the attention of the surgeons present to the fact that this was one case that no one could have explored from the vagina without rupturing the loop of ilium. There was no route left after the firm adhesions of several years' standing had glued the surrounding organs to the omentum and ilium. We were enabled to free the omentum, but could not free the ilium from its attachments.

Any of you who are doing vaginal drainage will appreciate this case before you complete a list of one hundred cases, unless you select only acute and subacute cases where intestinal and other adhesions are easily separated and the field easily explored.

This patient made a good recovery, and has gained thirty pounds in weight. There is a partial constriction of the rectum yet remaining, but it is gradually improving.

Dr. Karl F. M. Sandberg : I am very much interested in the paper presented by Dr. Abbott, and think we can all learn a good deal from it. It shows us the harmlessness with which the peritoneal cavity can be opened from below, and suppurating parts handled if we employ gauze drainage. The gynæcological world is completely at sea at the present time as to what method of treat-

ment to select for cases of pelvic inflammation, whether or not to operate, and by what method we should operate. New methods are proposed almost every week. It is impossible to lay down any rule for all cases ; each individual case will have to be treated upon its own merits. We know that a great number of cases of pelvic inflammation recover without operation, even where there is suppurative inflammation of the tubes.

Aspiration is a very valuable remedy in another class of cases, where we find encapsulated intraperitoneal collections of serum sometimes of great size, or where we find smaller pus cavities, generally in the tubes or ovaries, without well-pronounced constitutional symptoms. In some cases we may be able to empty several distinct cavities. I have used the aspirator in many such cases for the purpose of diagnosis or as a preparatory step before laparotomy, but the patients have almost universally declared themselves so much benefited, that the more serious operation could not be considered. In cases of large pelvic or pelvo-abdominal intraperitoneal abscesses not confined to the tube or ovary, the abscess should be opened and drained, I think, from the point or points most favorable for drainage, and no effort should be made to remove any organ. Then come the cases that require removal of the appendages, too numerous to classify here. For this purpose some have favored the abdominal route, some the vaginal, and some advocates of either route favor removal of the uterus with the appendages. Here the proposition is made to remove neither the appendages nor the uterus, but to simply break up adhesions and drain.

Dr. Abbott's paper shows us that it is not necessary in all cases to remove the suppurating organ. The doctor has simply broken up the adhesions of the ovaries and tubes, and evacuated the pus and established gauze drainage, leaving the suppurating walls, we might say, to take care of themselves, with good results. The paper is a plea in favor of more conservative work in these cases.

Dr. Abbott (closing the discussion) : I wish to thank the members for the consideration with which they have received my paper. In almost everything that comes up in surgery there seem to be three stages : one in which it is hard to get anybody to do anything ; second, a stage in which everybody wants to do everything ; and, third, a stage in which the wisdom of certain limitations is appreciated. While assuming that we have arrived at the third stage in the ablative treatment of pelvic inflammations, and are in the first stage of the conservative method, this

paper does not presume to have pointed out a settlement of the question. I have taken no positive ground, but have simply given you such data as have been obtained from my records. We have to add a great deal more before we can come to any absolute conclusions. As the paper states, these cases were operated on between July 1, 1895, and July 1, 1896, giving us only those cases that were operated upon several months ago, so that we might have something to go by as to the matter of recurrence and ultimate recovery. You will have observed from the paper that I have not gone into any theories whatever in reference to vaginal incision and drainage. I have simply given you the facts as near as I could get them from those cases which were recorded and looked after for the express purpose of getting some data on the subject.

In reference to one or two questions asked by Dr. Dudley—for instance, in regard to sacculation in tubal cases, is it not possible that we have been working on a basis which has been indicated to us by our predecessors, rather than looking into these matters for ourselves? I fear that we take things sometimes too much for granted. It has been my experience, after dissecting a good many tubes and making microscopic sections of them, that but once have I found a tube that was absolutely closed microscopically. I have seen them so closed that very little fluid would pass through them. I have seen tubes repeatedly occluded by the folding of the convolutions, but after loosening the convolutions and the adhesions I could pass a probe from one end of the tube to the other. I have done this both post-mortem and during operations.

In reference to another remark made by Dr. Dudley, I do not think surgeons operated twenty years ago as we do to-day. I practised at that time, but I did not operate then as I do now. Then I inserted an aspirator for the purpose of opening abscesses or made a small incision. The vaginal incision, as we do it to-day, is entirely different. It is possible that I was not explicit enough in my description of the operation as it is done by me. First, I make a large incision, so that I can well introduce my fingers; then I proceed carefully to break up the adhesions and peel off the organs from their abnormal situations. If there is a pus tube after I have separated the fimbriæ from the ovary, or wherever it is attached, I pull the tube down into the vagina when it is possible for the purpose of examination, etc. There are cases, however, where the adhesions are so dense that we cannot do anything with

them, and we dare not break them up for fear of injuring the intestines. In some cases I do bring the tubes down and strip out their contents and break up the adhesions sufficiently to leave them patulous.

Dr. DUDLEY : When you curetted the tubes, did you use the sharp or dull curette ?

Dr. ABBOTT : I used the dull curette for diagnosis only.

Dr. DUDLEY : I believe in my previous remarks I distinctly stated that we had returned to an old operation modified by improved technique and antisepsis. That is nearly true.

Dr. ABBOTT : In reference to curetting the uterus, a short time ago, having to make a vaginal hysterectomy, I curetted the uterus first, removed it, and then immediately made sections of the uterus, and although I used a sharp curette, and used it as thoroughly as possible, I found that almost over the whole area of the uterus I had not removed all of the endometrium ; that there was gland structure left. Now it may be in curetting the uterus we give the glands a better chance to drain. We certainly do not remove all the endometrium. We cannot do it with a sharp curette. We may think we do, but we do not. We do not remove all of the diseased tissue in curetting the uterus. This operation, vaginal incision, should not be done by those who are not familiar with abdominal operations, because it is in doing the abdominal operation that we get our schooling in diagnosis and manipulation. The vaginal operation is a more difficult one by far than the abdominal, and if it is not thoroughly done it might as well not be done. My experience has taught me that it is best not to use any instruments inside of the pelvis for breaking up abscesses. I feel safer without instruments when I have once entered the peritoneal cavity.

In reference to the case reported by Dr. Bacon, where there had been a pelvic abscess which had ruptured into the rectum and formed a rectal sinus from the abscess, I would say that these are the most beautiful cases for the vaginal operation that we have. We can easily incise such abscesses through the vagina and get direct and efficient drainage. In my experience these sinuses so treated have healed rapidly.

There was one point brought out that I would like to emphasize, and that is the effect of a previous inflammation before the present abscess or condition that we are operating for occurs. We will suppose the rectum becomes attached to the posterior portion of the uterus, and a secondary abscess forms which lifts up

the uterus and pulls with it the rectum. Now, unless we are exceedingly careful when we go into the cul-de-sac, we will go right through into the rectum.

I would call attention to the fact that I expressly excluded in my paper the cases I would not operate on, and they were such cases as are complicated by tuberculosis, appendicitis, intestinal obstruction, malignant disease, or abscesses which occur above the line, uniting the anterior superior spinous processes of the ilium. We cannot reach above this line. That brings me to answer Dr. Dudley's question as to how I know when a case is tuberculous. I know of no means of always making a diagnosis of tuberculosis before operation, but where I have any suspicion or indication of a general tubercular condition or of tubercular peritonitis being present in the slightest degree, I should not operate in this way.

Dr. Peterson : I believe the doctor states that of the thirty cases reported by him thirteen were of gonorrhœal origin. I would ask him whether he considers them cured of the endometritis, or symptomatically cured.

Dr. Abbott : I have not got the data in reference to all of the cases, but some of them are cured. I examined the most recent gonorrhœal case mentioned in the table very recently and carefully, and the patient is entirely cured. There is no indication of a return.

I made these patients promise to let me hear from them every month, so that I might know the outcome of the treatment. Some of them have reported and others have not, but have been visited and examined.

Dr. Dudley : Have you in quite a number of cases succeeded in evacuating the pus without invading the peritoneal cavity ?

Dr. Abbott : In very many of them I have, in others I have not.

Dr. Dudley : Do you think the invasion of the peritoneal cavity in the course of evacuating the abscess makes the operation more dangerous ?

Dr. Abbott : No. I operated on one case last week for pus tube on one side, with a healthy tube on the other. I did not manipulate the healthy side more than was necessary, but there being a tube of pus, as it were, formed by adhesions, extending to the bottom of the cul-de-sac from the abscess above and occupying only half of the cul-de-sac, I had, of course, to enter the peritoneal cavity to get at the abscess.

Dr. Dudley : You do not sponge out the pus ?

Dr. Abbott : Lately I have simply drained, put in my gauze. I have not sponged or washed.

Dr. Dudley : Do you not think light sponging gets out a good deal of the pus ?

Dr. Abbott : In a good many cases it is hard to sponge without going over areas that you do not want to infect—I mean in those cases where there is an open peritonæum.

Dr. McArthur : In a moderately thickened tube, possibly semi-fluctuating, do you break into it with the finger ?

Dr. Abbott : I separate it from the ovary if it is there attached, and nine tenths of them are so attached more or less, and then if there is any question about it I get it down into the vagina, take hold of it with forceps and explore it with a probe.

Dr. Dudley : Have you tried the anterior incision of these tubes ?

Dr. Abbott : I have not had occasion to do so, although I have broken up abscesses above the uterus and between the uterus and bladder. I am glad, however, you spoke of that point, as I think it is imperative to make the anterior incision in cases in which there is an abscess which has opened into the bladder.

Dr. Dudley : You would not hesitate to incise both anteriorly and posteriorly, would you ?

Dr. Abbott : No, if I thought it was necessary.

The President : You irrigated formerly more than you do now ?

Dr. Abbott : Yes. In the table you will find quite a number of cases that were irrigated. Those I irrigated and those I did not irrigate are so stated.

The President : In what class of cases did you resort to irrigation ?

Dr. Abbott : I did not adopt any rule. For the purpose of comparison I irrigated some and did not irrigate others. I did not irrigate where there was no pus.

The President : Do you irrigate with sterilized water ?

Dr. Abbott : I irrigated some with a bichloride solution and some with sterile water. I irrigate very little now.

Dr. Ferguson : Were any of the cases acute or chronic phlegmon where you had opened the peritonæum ?

Dr. Abbott : Yes, and they are indicated in the table.

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WHEN, IN OPERATING FOR SEPTIC PELVIC DISEASE, IT BECOMES NECESSARY TO REMOVE THE OVARIES, IT IS USUALLY ADVISABLE TO REMOVE THE UTERUS ALSO.*

By Fernand Henrotin, M.D., Chicago.

The proposition as here set down I take pleasure in endorsing without equivocation, as it coincides with the conclusions which I have arrived at, and which are based upon my practical experience.

The gentlemen who follow me will undoubtedly speak of the physiological functions of the uterus, of its nerve supply, of its intimate relations with the great pelvic sympathetic centres, and of the impropriety of removing it without a true scientific surgical basis for such action. The answer to all these arguments is simple: Removal of the uterus cures many women who, after removal of the ovaries and tubes, were not cured.

This subject cannot be satisfactorily discussed except from a purely practical standpoint, because, like many important innovations, having originated in the endeavor to permanently relieve otherwise incurable conditions, and the operation being comparatively recent, the means by which the cure is effected have not yet been scientifically explained. Any operation which relieves the diseased condition without ulterior bad results is scientific, and when the satisfactory results are once demonstrated, scientific explanations by the score will be forthcoming.

When, twenty-five years ago, Lawson Tait began to remove tubes and ovaries, public opinion, by the very same arguments now advanced against hysterectomy, was arrayed against the removal of these important organs. The cures he effected were, however, his

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justification. His success was followed by wholesale exsections of the uterine appendages by undiscriminating operators. The opportunity thus afforded for the study of diseases of the tubes and ovaries paved the way for work on a scientific basis, and made conservative surgery of these organs possible, so that the mature and experienced abdominal surgeon of to-day is no longer the wholesale ablator of the past.

Scientific hysterectomy may be evolved in like manner.

The vaginal extirpation of the uterus in severe cases of suppurative peri-uterine disease was commenced over five years ago, and from the very beginning it was recognized that patients thus operated upon were completely cured; and the contrast between these women and those operated upon by the abdominal method was very marked. At this time it must be remembered that the abdominal method aimed at nothing more than the removal of the ovaries and abscess sacs, or exudate.

At first more stress was laid upon the method of operating by the vagina as a factor in the cure, because of the downward drainage. It was soon recognized, however, that the removal of the uterus was the most important element in the success of the operation, for when Krug, Baldy and others began to do the same operation by way of the abdomen, their results were nearly as good.

Mutilation is so abhorrent to the true surgeon that unnecessary or imperfectly indicated operation seems a crime, and the performance of hysterectomy would have been condemned by the unanimous voice of the profession long ago had the results obtained not demonstrated its immense value.

The one factor that led, more than all others, to the adoption of this operation, was the frequent failure of salpingo-oöphorectomy to cure the patient.

This fact cannot be denied, and now that patients are cured by this additional operation who were unrelieved by the previous one, it is becoming more universally acknowledged that removal of the tubes and ovaries seldom results in an immediate and prompt recovery.

All who are willing to face this question frankly, and who keep their patients under observation, must acknowledge this fact. During the first few weeks the woman supremely rejoices at having escaped from her close contact with a possible fatality, and, relieved by a long rest in a recumbent or semi-recumbent posture, she is only too anxious to emphasize the dictum of her physician that now she is cured.

When, however, she begins to walk about and resumes her daily

occupation, how often the pains return, and now with the addition of the nervous and circulatory disturbances of the menopause; her anguish lest she be not cured is frequently augmented by the appearance of hemorrhages or excessive menstruation, with possibly profuse leucorrhœa, and all this may continue for months and years.

Any conscientious practitioner who has had abundant opportunities of observing this class of patients, but who does not operate himself, will vouch for the truth of this statement, and the operator himself seldom has the same feeling of security in the permanence of an uninterrupted convalescence which his patient has when she bids him good-bye after the operation.

If the operator be one who does not believe in performing hysterectomy for septic pelvic diseases, let him compare his cases with those in which he has operated for uterine myoma, and in which the removal of the uterus was necessary, and let him bear in mind how much more satisfactorily the latter have progressed.

It is true, as Dr. Etheridge says, that these patients turn the corner after a while, but for some the lane is long before the turn, and for some the turn never comes. This is more common than many are willing to acknowledge, especially those who, when hysterectomy was first proposed, uttered their prejudices too loudly and too publicly.

February 10 I removed a uterus from a woman who had been operated upon a year and a half previously, and who had become a confirmed invalid. The day before I was consulted by a lady who had been operated upon five and a half months ago by one of the most prominent members of this society, and who had suffered so much and bled so profusely that I could hardly persuade her that she would better wait a little longer before having her uterus removed.

February 5 I was called to see a patient upon whom I had operated three months previously for hydrosalpinx, and who was suffering intense pain from two large masses of exudate, one at each cornu. A week later a patient on whom I had performed hysterectomy informed me that a friend of hers, from the same section of country, who had been operated upon by another magnate of this society, and had had something removed from the abdomen (although I knew that something was not the uterus, since this surgeon never removes the uterus save for cancer or fibroid), was about to consult me regarding her condition. About the same time I was addressed by a medical man, who complained that a patient from whom he had removed both ovaries for double ovarian abscess eight or nine months previously, was still suffering acute pain. On February 18 I was consulted by another medical friend concerning a

lady whose ovaries he had removed six months previously, and who had just commenced to bleed profusely. On the same day I went into the country and removed the uterus from a lady who had had her ovaries removed four months before, and who had never ceased to suffer excruciating pain. All these are bona fide cases which I have seen, or in regard to which I have been consulted, within two weeks, and yet many men say their patients do not complain nor return.

Removal of the tubes and ovaries does not always stop the pain, hemorrhage or discharge, neither does it in all instances prevent or retard the growth of neoplasms, and above all it does not abolish the continuance of abdominal nervous phenomena.

Removal of the uterus, on the other hand, if properly performed, prevents recurrence of the hemorrhage and discharges, always destroys neoplasms, unless malignant, usually removes the pelvic pain, and, I am convinced, renders the nervous disorders due either to the disease or to the climacteric infinitely less.

It is not pretended or claimed that hysterectomy is a cure for all ills of flesh, and if a woman's uterus is removed, together with the ovaries, for a condition foreign to these parts, it cannot be argued that the operation will cure her.

Neither is it claimed that uterine castration improperly performed will always be followed by ideal results. The argument here presented is simply in support of the proposition that when the operation is made for septic pelvic disease, and the ovaries must be sacrificed, it is ordinarily advisable to remove the uterus also.

Probably the most conclusive proof of the propriety of hysterectomy in this class of cases is the ease with which the arguments of its opponents can be overthrown.

1. *The operation is unscientific and unsurgical.* This objection has already been answered in my introductory remarks. Tersely put, it is scientific and surgical because it cures.

2. *It is a mutilation, as it involves the removal of an unoffending organ.* The uterus is not an unoffending organ. This is sufficiently proven by the cases in which salpingo-oophorectomy has failed, and in which hysterectomy has been followed by cure. Our opponents claim that the burden of proof lies with us, as the uterus in these cases is presumably a healthy organ. As its removal is usually followed by cure, the burden of proof would seem to lie with them. How can it be determined that the uterus is healthy? In many cases the alteration in the size, shape and density indicates plainly its diseased condition. Or the density of the adhesions of diseased appendages or the exudate to its walls may indicate the necessity of its re-

moval by reason of unavoidable trauma. But even if a uterus is not markedly altered, is it therefore presumably healthy? Is it reasonable to suppose that a uterus which is continuous with and composed of the same tissues as the diseased tubes will remain uninfected? The vast majority of all septic diseases of the tubes and ovaries, whether they have reached these organs by the lymphatics, the veins, or by continuity of mucous surfaces, are secondary to an infected endometrium. Is it reasonable to suppose that they leave behind them a presumably healthy uterus?

Of what use is the uterus after the ovaries have been removed? You will be told that it is a distinct organ, having definite physiological functions. It is not a distinct organ, and after removal of the ovaries has no physiological function of use to the economy. In connection with the ovaries it plays a most important part in relation to child-bearing and normal menstruation, and furthermore, as Dr. Harris states, it acts as an excretory duct for the secretions of the ovaries. After ovarian castration it remains as a malevolent obsolete duct. It is then simply part of an organ, a good breeding-ground for harmful bacteria, lined with a granulating surface conducive to hemorrhage and discharge.

3. *Hysterectomy involves greater danger to the patient than salpingo-oophorectomy alone.* I deny this, and am convinced by my personal experience, and by carefully and without prejudice noting the results of others, that the mortality in large series of cases is not increased by the removal of the uterus. The advantage obtained by the removal of all the diseased tissue, by the establishment of more perfect drainage below, and by the perfection with which the pelvic cavity can be cleansed, more than counterbalances the harm done by the slight additional trauma or the few more minutes required for the operation. Cases may exceptionally occur in which this objection is valid, but they are very rare.

4. *It destroys the equilibrium of the pelvic floor, displaces the pelvic fascia, changes the axis of and shortens the vagina, and thereby tends to produce prolapse of the abdominal viscera and the remaining pelvic organs of the vagina.* This objection may be obviated by leaving the cervix in suitable cases, operated by abdominal section, for it seems probable that the integrity of the pelvic roof will be better maintained under these circumstances than when the appendages are removed and the lateral supports of the uterus impaired. When the conditions render the removal of the cervix imperative, the force of this objection is materially lessened by the severity of the disease. Accidents of this kind are so rare that this objection is of slight practical value.

5. *It unsexes the woman and destroys sexual feeling.* The assertion is constantly made that hysterectomy completely unsexes a woman, and more certainly and promptly destroys sexual feeling than does salpingo-oophorectomy. When a disease is so serious as to demand the complete removal of both ovaries, this objection loses much of its importance, as the prime necessity is the saving of life and the restoration of health. There is reason to believe that this matter has been very much exaggerated. I concur with the opinion expressed by many careful observers that, aside from the sadness occasioned by the knowledge of the fact, women castrated, after the age of full development, in no wise change their disposition or their manner, nor do they lose any of their womanly characteristics. Loss of sexual feeling is a matter of only slight importance except as related to womanly attributes, but that this occurs has never been proven, and most patients deny it with all apparent sincerity. That uterine castration is more serious in this regard than simple ovarian castration is still further remote from proof.

6. *The ablation of the uterus produces a more profound impression upon the nervous system.* The exploiting of this objection frequently affords medical gentlemen gratifying opportunities of displaying their knowledge of the anatomy and physiology of the nervous system in general, and the great sympathetic in particular. Common every-day experience, however, seems to indicate exactly the contrary. One of the most satisfactory results of hysterectomy, which, more than almost any other factor, has led to its adoption, is the markedly diminished nervous disturbance subsequent to the operation.

7. *In very young women, or such as have infantile sexual organs, the operation is said to be followed by involution of the vagina, with atresia.* This is a valid objection, and forms one of the contradictions to the operation.

Before closing, I must protest against the imputation cast up to gynæcologists by both general practitioners and general surgeons in their remarks concerning the habitual performance of hysterectomy. The time for sentiment is prior to the removal of the ovaries. The extent to which conservative operations on the ovaries are performed is probably unknown to many of the gentlemen. A portion of a tube or a bit of an ovary may be all that is required to preserve a woman in her entirety, and then, of course, the uterus is sacred. Again, it may be possible that time will prove that a woman may do much better without hysterectomy when the ovary is allowed to remain, even though the tubes have to be entirely sacrificed. The salvation of ovaries is a matter that needs very faithful consideration,

and the effects upon such patients long after the operation must be carefully noted. It may be that this course will obviate the necessity of hysterectomy in a reasonable proportion of cases, and if so the gynæcologists will greatly rejoice.

This, however, is hardly germane to this discussion, which applies only to that large class of patients whose ovaries are so diseased that they have to be sacrificed.

The answer might also be made that operators who never perform hysterectomy for septic diseases come to look lightly on the removal of the ovaries, being under the impression that the woman is not unsexed as long as the uterus is left. Unless the usefulness of a castrated uterus can be demonstrated, I am of the opinion that it should be removed.

The following may be summarized as reasonable conclusions on this subject, which I believe will meet the approval of surgeons:—

1. In operating for pelvic septic disease, either by the abdomen or the vagina, the condition of the ovaries should be the first object of special consideration, and no part of such an organ, when apparently healthy, should be removed.

2. When the ovaries, an ovary, or a part of an ovary, is left, the uterus should never be removed unless it is the seat of otherwise incurable disease.

3. The removal of diseased fallopian tubes, even in their entirety, is no warrant for the removal of healthy ovaries or a healthy uterus.

4. Even if the tubes and ovaries are entirely removed, the uterus should be spared, if its removal will entail appreciable increase in the danger of the operation to the patient.

5. In very young patients, or such as have what is known as infantile uteri, the uterus need not be removed.

6. In the vast majority of cases when, in operating for pelvic disease, it becomes necessary to remove the ovaries, it is most advisable to also remove the uterus, because it serves no further purpose in the economy, and because it remains a serious element for future harmfulness.

7. When, in operating by the abdominal method, the cervix is found apparently healthy, it is advisable to make a supra-vaginal amputation and to leave the cervix, putting in stay stitches as recommended by Baldy to prevent displacement of pelvic fascial.

With greater experience to be gained principally by examination of ablated uteri, we may learn to distinguish inoffensive varieties, and if so will leave all such undisturbed, for the smallest atom of human flesh which is harmless and does not disfigure, should always be sacred to the surgeon.

PLEA AGAINST HYSTERECTOMY WHEN REMOVING THE OVARIES FOR SEPTIC PELVIC DISEASE.*

By Franklin H. Martin, M.D., Chicago, Ill.

The Creator of the universe reached the acme of His creations when He finished man. There was but one being more intricate for Him to create, and that was accomplished when He set His seal of approval on the finished woman.

Woman, what a marvel of intricate machinery! Clothed in a casement of enchanting mould, which compels the abject worship of man and defies the artistic genius of all human intellect to reproduce in fiction or sculpture!

It was fitting that the Creator should select this, His fittest gem, as the mother of mankind. Intellect of such refinement that the unthinking calls it instinct; purity which protects itself by its own deep light; loyalty to attachments at which man marvels, but cannot imitate; sweet dependence, to which the services of the strong are impelled; unselfish love, of a depth unmeasurable by man and unconquerable by the possessor. And all of these attributes are intimately linked in the human mother with the marvelous organs of reproduction.

The organ which was destined from the beginning of the evolution of protoplasm to accomplish the most precise and highest work of reproduction is the uterus. It is the most marvelous automatic organ of organic life in the economy of mankind. We often forget, I am afraid, that this little organ, without which for one generation humanity would become extinct, and upon the vagaries of which the destinies of nations have been changed, has a most intricate connection by nerve and blood and tissues with the woman in whom it works. And this connection is not of an indifferent type, but is of precisest nature; so that its automatic influence over the being upon which it depends is exacting and commanding. The inter-dependence between this organ and the other organs of the woman, and the other organs and this organ, is the most wonderful thing in the world. It begins its miraculous work at puberty, when menstruation begins, and continues its arduous work until the menopause brings rest. In the interval it brings forth new life, and at each of these times it enacts the acme of earthly mysteries. The marvel begins when the ovum enfolds in ardent embrace the welcome germ of

*Read before the Chicago Gynæcological Society, February 19, 1897.

male life and finds a fertile nest in the succulent folds of the uterus. At that instant the uterus takes command, and rules with an unerring precision not only the organic life of the mother, but also for nine long months it even modifies and moulds her intellectual, moral and spiritual life.

Instantly, with infinite precision, it telegraphs imperative messages to the principal organs of the body. The heart is called upon to supply more blood; the brain must create hunger in the mother, so that abundant food will be supplied; the menstrual centres are telegraphed to suspend operations; the heretofore dormant breasts are required to make ready that they may become the storehouses in time of imperative demand; the stomach must digest more food; the intestines must assimilate with increased precision. Nor are the immediate environments of this great uterus neglected. It begins building its own walls; it gradually makes soft the hard cartilages of the strong pelvis; it prepares the soft outlets for the inevitable conflict which they must have with its own strong muscles at the time of labor; it enlarges its own bulk more and more, until it forms an unwieldy tumor, but its control is so perfect over the neighboring organs of the abdomen that it accomplishes all this without disturbing the normal functions of one. So, with the mastery of a great general, the uterus commands the whole field, every organ, like a division of an army under perfect discipline, performing its part at the correct time. Day after day the lines of battle are drawn closer and closer, until at a supreme moment it gives the signal which begins the marvel of all its accomplishments—labor. The great muscles of the uterus, which have been developed in inactivity, begin the work of expelling its precious charge; the cervix dilates; the parturient track is filled with a protecting lubricant; the uterus at the proper time calls to its assistance the voluntary muscles of the mother's abdomen, until finally the whole economy of the woman is intent upon the one great act of birth, which is finally accomplished by that last heart-rending cry of sacrificial pain.

Notwithstanding all this, the work of the uterus is not yet finished: the machinery of the support of intra-uterine life, the placenta, must be discarded; the breasts must immediately be prepared to take up the suspended work of nourishment; the uterus itself must begin its rapid work of involution; pounds of its bulk must in a few days have disappeared, an antiseptic fluid furnished for the bruised peritoneal canal, and finally, in an incredibly short period, this wonderful organ, through its automatic nervous system, must again bring itself into normal relations with the organs of the entire body.

Colleagues, these are a few thoughts which come to me in regard

to the organ the fate of which we seek to definitely decide in this influential society on this night. Such thoughts may smack of sentiment when considered amidst the scenes of gaping abdominal wounds, with the red-handed surgeon panting for new conquests under the stimulus afforded by the fumes of human blood; but in the eyes of broad, unprejudiced humanity these thoughts may suggest the question: Is it necessary *ever* to remove the healthy uterus because of disease elsewhere?

My position (and I hope those who know my methods can say that my theory and practice are consistent) may be expressed as follows:—Never remove the healthy uterus for the cure of a pathological condition foreign to it; remove it only for inherent disease, where such disease is incurable by minor means and seriously menaces the life of the patient.

Therefore I should most positively oppose the removal of the uterus in all cases simply because the appendages of both sides are the seat of apparently incurable disease.

First—Because I believe that many of the cases of apparently incurable diseases of the appendages for which said appendages have been sacrificed in the past, could have been cured unmutilated if the execution of their sentence of annihilation had been sufficiently postponed to have given the organs and their allies time, stimulated by rational treatment, to have exerted their own powerful natural reparative capabilities. I believe that the pendulum of pelvic surgery which began with the over-zealous followers of the great Emmet, with their interminable vaginal swabbings, which has now swung in the opposite direction to well-nigh criminal surgery, must find its final legitimate resting place in a middle ground between the two. In the future the gynæcologist must cure his patients by curing their diseased organs, instead of by cutting the organs out, or the human animal will become extinct. Before resorting to hysterectomy in all but the gravest inherent disease of the uterus, exhaust all therapeutic and minor surgical means, giving the patient, too, the advantage of time, which frequently is an important factor in diminishing pelvic pathology.

Frequently, microscopically, and reasoning from analogy, actually the uterus appears absolutely healthy when a septic process has destroyed the integrity of the appendages. Time has given the industrious uterus (through which septic material gained access to the appendages) an opportunity to recover. Here I should remove the appendages thoroughly, excising the fallopian tubes well into the horn of the uterus, a la Watkins. I should fix the fundus of the uterus to the abdominal wall by transfixing it with an artificial liga-

ment of living tissue. I should dilate the uterine canal, curette it with thoroughness and care, render it actually sterile with antiseptics, and leave in it a loose stimulating gauze drain.

I should advise this course first, because in the hands of all but expert abdominal surgeons it is a less formidable and therefore less dangerous procedure. The Chicago Gynæcological Society is one of three great gynæcological teachers of the world. We are giving advice to thousands beside our own members. In every county of this broad land there is an aspiring gynæcologist of local repute, with his small hospital, who operates on all operative cases which will submit to local talent. His experience is often limited to one or two sections a month. Theoretically he is posted because he is a reader, and he reads us. Practically his experience is necessarily limited.

Low mortality in abdominal surgery, everything else being equal, comes with many cases and much experience. The technical difficulties, which can only be accomplished by experience, are much greater in hysterectomy than in simple ablation of the appendages; therefore we should not advise the operation unless much is to be gained which will offset the additional danger. In my opinion nothing is gained by hysterectomy for the difficulty in question over the operation I have described. In cases where cures have been reported following a hysterectomy subsequent to simple removal of the appendages, with failure to relieve symptoms, sufficient care was not exerted in the details of the first operation, or the uterus originally contained inherent disease of a serious character.

Second—In order to be consistent in removing the uterus, when septic appendages exist it is absolutely necessary to remove the whole uterus, including the cervix, because the cervix is a portion of the track through which septic infection was conveyed to the appendages, and just the portion of the track in which the greatest difficulty arises in removing infection, because of its deep glands. The cervix, too, is the portion of the uterus which is most liable to be infected with cancer. This latter fact constitutes one of the strongest arguments employed by the total annihilation wing of this controversy in favor of total extirpation of the uterus.

Total removal of the uterus adds two additional elements of danger to an already formidable operation, viz.:—First, the additional mechanical difficulties encountered in removing the cervix, and, second, the additional danger of infection incurred in making a second opening through the peritoneum, this second opening being into a cavity which it is so difficult to render clean.

The removal of the cervix and the collapsing of the upper end of the vaginal tube, with resultant cicatricial contraction, consider-

ably shortens the vagina. In younger women, where marriage relations must be sustained, this arbitrary shortening of a canal which plays such an important role is bound to interfere materially with the full rounding out of that paramount act of connubial bliss, sexual intercourse. I have examined women after vaginal hysterectomy and abdominal total hysterectomy where due care had not been observed to preserve the vagina, in which that organ had been practically obliterated. Such a result places an awful responsibility upon some surgeon.

Third—There can be no doubt that the nervous phenomena during the convalescence from hysterectomy are far greater than from simple removal of diseased appendages. This is inevitable, because of the almost unlimited nervous communication between the uterus and all other parts of the nervous system, the balance of which is ruthlessly and suddenly destroyed at one fell swoop on the removal of the uterus. The nervous sequela of most serious import, and the one greatly dreaded by our patients, is one which occurs in a small percentage of cases, but in too large a percentage to justify us in ignoring it—the sequela I refer to is mania. This symptom seldom follows simple removal of the appendages, but we dread it as a certain menace in a small but definite percentage of hysterectomies. It is this complication following hysterectomy which induced the great Keith to completely abandon the operation for a time in favor of less dangerous procedures.

Sentiment.—Nor can we ignore that strong sentiment in women which makes them abhor the prospect of losing their most important organ. Sentiment, which is so hard to analyze, wields more influence in all ages than do the most definite facts of the scientist. It will impel a man or woman to follow a tattered flag to the ends of the world, forces a tear at a national song, influences the legislation of nations, shades justice, and annihilates and founds nations.

A scientist may definitely convince a woman that her uterus is a superfluous organ when the appendages are missing; he may convince an old man that his testicles are superfluous, and that the removal of those organs would atrophy a troublesome prostate. Notwithstanding these reasons, not a man in my hearing but that would applaud the old man—that would indignantly resent a proposition of castration, even if advised by the most scientific surgeon living. Why? Unreasoning sentiment.

Then why not respect this sentiment in woman? In young women, in women of all ages? Their sentiment is more reasonable than the old man's. More frequently than with men, their whole lives are wrapped up in the present or prospective duties of matri-

mony and maternity. While the removal of the appendages would blight prospects of maternity, it would not so surely incapacitate her for the other duties of the wife. God forbid that the wily surgeon will ever be able to educate out of woman this holy sentiment.

Let us, too, not only preserve but cultivate that sentiment in man which makes him shrink against the unsexing of our women. Safe surgery at one time nearly annihilated that sentiment among a certain class of enthusiastic surgeons. That in woman which makes her superior to man, which puts into her that something which we call womanliness, that which gives her an affectionate sympathy which we men worship, is that in her which makes her capable of becoming a mother and carries with it maternal instincts. If by removing her maternal organs we do not remove her womanly graces (and I do not believe that we do),we at least are in danger of arousing that wholesome sentiment of which I refer against the unsexed woman in the minds of those she loves.

THE CONSEQUENCES OF REMOVING THE UTERUS.*

By Weller Van Hook, M.D., Chicago, Ill.

In astonishment and delight at the discovery that the womb could be removed with comparative ease and without a prohibitive mortality, almost all surgeons were a few years ago carried off their feet with enthusiasm for the operation, and vied with one another in the honorable effort to reach a low death-rate. Now that the mortality of vaginal hysterectomy has reached a point so low that we constantly expect satisfactory results and are surprised when they fail us, we must turn our attention with especial interest to the inquiry as to the indications for the operation, and particularly to its applicability to conditions other than progressively destructive disease. The intrinsic value of the uterus to the economy deserves especial thought when it is proposed to extirpate that viscus for suppurative conditions and for neuralgia.

Physiologists are in the habit of extirpating the various viscera of the lower animals in order to study the value of the excluded organs by observing the post-operative conduct of the victims.

Although the experiment of removing the human uterus has been performed in the course of treating disease in a very large number of cases, the recorded observations of the findings, mechanical and physiological, are very few and widely scattered. It would

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seem, therefore, that hysterectomists are still too much interested in their operative technique and in their mortality rates to sacrifice the time required to consider minutely the comparatively minor details of the remote consequences of their activity.

If we could imagine the uterus and its adnexa removed by the vaginal route and without the necessity for resorting to any hæmostatic device or manœuvre which would either bring about necrosis of the tissues or leave a foreign body, we would still have a number of mechanical consequences of our work which would not be wholly insignificant.

To most of us would probably first occur the change in the relations existing between the bladder and rectum. These viscera are usually separated from one another in the adult by the vagina below and the uterus above. But inasmuch as both rectum and bladder are hollow organs, and are by nature adapted to a wide range of alterations in position and distension, we are forced to the conclusion that under the hypothetical conditions they would suffer less from the mere absence of the womb than from the effects of adhesion to one another instead of to the mobile uterus normally interposed as a buffer between them. These adhesions may be sufficiently broad and dense, in cases of hysterectomy performed for extensive disease, to give rise to really important disturbances.

Of much greater practical importance are the changes which, in all cases, take place in the uterine ligaments. When the uterus is removed these ligaments contract strongly, partly by virtue of their elasticity, partly on account of the contractility of their muscular fibres. The ends of the ligaments are, however, drawn into the plug of cicatricial tissue which in practice is always formed, and are thus put in mechanical communication. In the technique of vaginal hysterectomy, in which, as a rule, no provision is made for approximating the broad ligaments, this is the only mode by which these important supporting structures can mechanically communicate with each other and resist the intra-abdominal pressure. (Prof. E. C. Dudley, of Chicago, has informed me that he has for some time been in the habit of drawing the broad ligaments into the vagina, after removing the uterus, and fastening them into position there by means of sutures. In this way the vagina is well supported.)

The late contraction of this cicatricial plug, plus the retraction and readjustment of the ligaments themselves, no doubt suffice almost always to restore the so-called pelvic roof to a condition almost resembling its normal integrity.

That the removal of the uterus is regarded as equivalent to a diminution in the textural area of the pelvic roof and an abbreviation

of the powerful broad ligaments, is shown by the fact that hysterectomy, together with other procedures simultaneously practiced, is by many regarded as a legitimate operation for complete procidentia, some surgeons making an especial effort to shorten these ligaments or to approximate them by sutures after the removal of the uterus, particularly when, as in abdominal hysterectomy, the parts are easily accessible.

The absence from the literature of reports of hernias following vaginal hysterectomies is partly to be accounted for by these changes in the cicatrix and by the readjustment of the pelvic roof to the new conditions, but also by the fact that intra-abdominal pressure is here exerted at an acute angle to the plane of resistance.

None denies the shortening of the vagina, especially after kolpohysterectomy, since a portion of the tube is usually removed as a systematic part of the technique. The enthusiastic advocates of the operation deny that the amount of shortening that results when the operation is done for non-malignant disease has any important bearing upon the functions of the remaining viscera, or upon the sexual function of the vagina itself.

The importance of the actual shortening of the vagina would be less if the direction of the tube were not at the same time altered so that it takes a position more nearly parallel to the axis of the pelvic inlet.

In a purely theoretical consideration of this subject injury to surrounding structures during operation, especially to the bladder and ureters, the rectum, the sigmoid and the small intestines, might be left unconsidered. But in such a practical discussion as is the present these injuries, now fortunately very uncommon with experienced operators, must be regarded as among the risks involved in the operation.

Similarly the inclusion of the ureters in contracting cicatrices may be a consequence of the disease which necessitated hysterectomy, or it may be a direct result of the operation itself.

The consequences of removing the uterus thus far noted have been almost wholly mechanical.

The more immediately physiological results remain for discussion. Dr. Dudley has called attention to the effect of hysterectomy upon the pelvic tissues considered as the so-called pelvic diaphragm.

It is certain that removal of the uterus with the appendages is highly injurious in undeveloped girls and has not, I believe, been questioned. The imperfect evolution of the external sexual characters, together with the social penalties which follow, have stayed the hands of enthusiastic advocates of hysterectomy under these conditions,

so that among the few well-established contra-indications to hysterectomy stands the imperfect physical development of the patient.

In a small number of recorded cases atrophy of the vagina has followed hysterectomy. We have as yet no data which will enable us to predict its occurrence.

It is certain that the removal of the uterus with the appendages is highly injudicious in undeveloped girls, and has not, I believe, been questioned. The imperfect evolution of the external sexual characters, together with the blasting social penalties which follow, have stayed the hands of the most enthusiastic advocates of hysterectomy under these conditions, so that among the few well-established contra-indications to hysterectomy stands the imperfect physical development of the patient.

That the disagreeable phenomena attending the menopause after hysterectomy are more severe in character, or more prompt to occur, has thus far, I believe, not been demonstrated.

The result of leaving one or both ovaries after removing the uterus has not been widely discussed. In one of my own cases of hysterectomy for carcinoma one of the ovaries was left, together with a portion of a tube. The woman has not ceased to menstruate regularly, although about five years have elapsed. A slight discharge takes place from the tube, which is implanted in the vaginal cicatrix.

The uterus is removed and the ovaries left in place by French surgeons not infrequently. Where the uterus is sufficiently diseased to warrant its removal, but where one or both ovaries are normal, it would seem that this would be a legitimate surgical resource, especially in view of the disturbances of the menopause, which are often sufficiently serious to constitute of themselves a serious drawback to the comfort and happiness of the patient.

The attention of the profession has been of late called to the sufferings of patients in the post-operative menopause. F. Jayle states that he has carefully followed the cases of one hundred women after oöphorectomy, and that it is the rule to see women have trouble with the phenomena of the menopause after castration.

Such has been my own experience, especially in the case of women who have expected a number of years to elapse before the normal menopause.

For these victims of our imperfect art ovarian feeding has been devised, somewhat empirically, with results which are still *sub judice.*

The plastic work of A. Martin deserves a much higher place in our surgical therapeutics since, just as we would endeavor to save

the stump of a diseased hand, so we should here try to preserve the remnants of one or both ovaries, or of the tubes.*

The effect of removing the uterus and its appendages upon the morale of a woman may be *nil*, or it may be enormous. We are forced by the present limitations of our physiological knowledge to reduce as many of our problems as possible to their lowest terms. We are often obliged to leave out of count the mentality of our patients, and to ignore to some extent the effect of our work upon parts remote from the seat of disease. But it must be admitted by every fair-minded man that many a woman falls into despondency or apathy after the removal of these organs. The cavillers in and out of the profession have found no subject more to their taste than that of oöphorectomy and its abuse. The ill-effects upon the patient's morale which they have been able to cite as consequent upon oöphorectomy apply with equal force to hystero-oöphorectomy.

But entirely aside from the purely mental changes that take place after hysterectomy, we must remember that the non-pregnant uterus, though a small viscus, is upon impregnation capable of a development and an augmentation of function which no other organ can equal. The unimpregnated womb must contain in its tissues all these possibilities in a latent or akinetic form. Its motor, sensory and sympathetic nerves and its ganglia must stand in very free and easy communication with the great nerve-centres of the body. And large and important avenues of nervous communication have been demonstrated as a matter of fact. Exactly what part of the great systems of nerve fibrils in the spinal cord allotted to the transmission of sensory, motor and reflex impulses belong to the uterus itself is not as yet known. Nor do we yet know what becomes of these paths of nerve force when the organ they serve has been removed. We do know, however, that when one of the lower extremities has been amputated, important changes follow in those parts of the cord through which those fibres pass which supply the lost member.

To me it is inconceivable that when the uterus is removed important changes in the nervous system—cerebro-spinal as well as sympathetic—should not occur. And I am confident that when careful and minute examination of the nervous system is in future made after hysterectomy, profound structural changes will be found to have taken place, changes which will account for the functional disturbances already referred to.

* Martin has lately published in Monatsschrift fuer Geburtshuelfe und Gynækologie, January, 1897, the report of a most interesting case of tubal pregnancy, in which the tube was opened by incision after preventive haemostasis by temporary ligature, a coagulum removed, and the opening in the tube closed by a line of sutures.

To be sure, these extensive nervous connections favor the transmission of evil influences as well as beneficent ones, and the advocate of hysterectomy in all cases of salpingo-oöphorectomy would say that this very richness of nerve-supply is reason for removing the organ.

The whole contention that the uterus should be removed whenever its adnexa are gone is only a temporary makeshift—not in the line of true progress. Its advocates say: "The uterus without its adnexa is a useless organ; some patients whose tubes and ovaries are removed are not relieved from pain; hence all uteri whose adnexa have been removed should be extirpated."

For my part I am not as yet convinced that the uterus is a *wholly* useless structure when its appendages are gone. The extremists have not proved this premiss.

Besides, those patients not relieved after salpingo-oöphorectomy are patients who have some morbid condition remaining. Our effort should be to find out what these morbid conditions are. I ask the hysterectomists for a diagnosis.

In a recent case of acute exacerbation of a chronic salpingitis I removed the adnexa by laparotomy. The patient made a good recovery from the effects of the operation, but had intense neuralgic pain apparently about the right horn of the uterus. I believed that the ligature about the stump of the tube was making pressure on a nerve fibril. But as I could not be sure the trouble was not in the uterus I did a hysterectomy. The patient was freed from pain at once. I still believe the pain was a true neuralgia, especially as simple micro-technical methods did not reveal any disease of the uterus. Hence I plead guilty to a technique in the first operation which is not ideal—applying a small mass-ligature instead of isolating the vessels and ligating them separately. This case does not convince me that all uteri should be removed to prevent their giving rise to pain.

No sane and well-informed man now objects to the removal of the uterus together with its appendages if malignant disease is present. In that case all minor considerations give place to the life-saving purpose. But our ignorance as to *all* the consequences of hysterectomy may well give us pause when we consider the operation as applied to "pelvic suppuration" and to neuralgia. It seems to me we ought, at least, to limit our indications within the realm of pelvic suppuration, and curb our enthusiasm until the advocates of extended indications answer the following questions, which might, by the way, be equally well answered from observing cases hysterectomized for carcinoma:—

1. What has been the condition of the pelvic viscera for the first

five years after hysterectomy, and how have their functions been performed?

2. What changes in the general physical condition have been noted during this period?

3. What alterations in the functions of the nervous system have been noted, and how has the loss of the uterus affected the social attitude of the patient?

4. In the case of those hysterectomized patients who have died of diseases other than pelvic, what have been the post-mortem findings, especially in the case of the nervous system?

The burden of proof lies with the advocate of hysterectomy. If he does not show us a lower mortality rate than laparotomy gives us in pelvic inflammatory lesions he must show us very much better permanent results.

If the school led by Péan, Richelot, Ségond and Jacobs limited their energies in hysterectomy to a category of diagnosticated diseases I would certainly have less to make objection to. If, for example, hysterectomy were proposed for tubercular and actinomycotic salpingitis with sinuses leading in various directions the contention would be reasonable. We would perchance follow. We might remove the uterus for acute suppurative lymphangitis of the organ.

If it were said that suppuration about a lithopædion or about the bones of a fœtus outside the uterus, or about a fibroid or a dermoid cyst, might sometimes be best attacked by first removing the uterus, we might agree and occasionally report such a case. But the Gallie hysterectomist casts dust in our eyes when he says, let us remove the uterus for "pelvic suppuration," and thinks to escape criticism while we are occupied with photophobia. The whole question of whether we cut out an important organ or leave it by resorting to other surgical measures brings to mind the question of what is meant by "pelvic suppuration." This expression is no more a diagnosis than is "ascites," or "dyspnœa," or "leucorrhœa." The argument is confused amongst all the nations by the failure of the originators of the operation to give it a proper name. If they would specify under exactly what diagnosis we are to remove the uterus much argument would be avoided. We should not discuss hysterectomy as a cure for pelvic suppuration, but rather discuss the different forms of intrapelvic inflammation and their appropriate management.

I must agree with Landau, of Berlin, who is himself a skilled hysterectomist by the elegant methods of the Parisian operators, when he says: "I have the firm conviction, which I have obtained from statistics, that our honorable colleagues in France and Belgium make a great many hysterectomies in abscesses where we perhaps

reach the goal with the aid of incision, and that cases are operated upon there which are perhaps nothing more than parametritis posterior serosa adhesiva and such like—*i. e.*, cases which in no way are to be classed under the diagnosis of suppuration, to say nothing of complicated pelvic abscesses."

Pozzi, who was present at this meeting of the Berlin Gynæcological Society, agreed with Landau, and stated that the transperitoneal method remained for him the route of choice.

It must be admitted that the value of the uterus after the removal of the ovaries, which are the essential organs or generation in the female, does not seem very great. But it is difficult to see why a normal womb should be excised after oöphorectomy, which we know is followed by atrophy of the uterus. The statement that the uterus under such circumstances "is a dirty hole" is not argumentative. For my own part, I feel justified in removing the uterus (1) when it is the seat of disease otherwise incurable; (2) when at the time of performing salpingo-oöphorectomy it is in such a state of chronic inflammation as to make it appear probable that the strongly atrophying influence of oöphorectomy will not do away with the painful condition; (3) when the abdominal route to diseased tubes and ovaries is contra-indicated and when hysterectomy would seem to offer better facilities for their removal and for drainage. In other words, I shall in each instance ask myself, so long as the evidence stands as it does to-day, why I remove the uterus, and shall accept for reply only such positive answers as I would accept for a spleen or for a kidney, and shall not take refuge in the general fear that the patient may not be well if any part of the sexual apparatus is left.

Progress in gynæcological surgery cannot, I feel, be different from progress in the surgery of the extremities, in which we have learned to save fingers and toes, as well as whole limbs; or different from the surgery of the joints, in which we have almost abandoned destructive excisions. The arguments must indeed be cogent which will induce us to extirpate any structure which we cannot demonstrate to be diseased. The vaginal route for reaching the uterine appendages and treating them surgically, a route which was advocated and used by two of our most distinguished fellow-countrymen, Thomas and Henry T. Byford, long before the present popularity of this avenue, must in future be used for a variety of reasons, the chief of which is that by it we do not so seriously expose large peritoneal areas to injury and infection. Fortunately we do not always need to remove the uterus in order to expose and treat the structures above it. So that the general popularity of the vaginal route is likely to increase, and will not long suffer from the rash advocacy of hysterectomy which is now the vogue.

A PLEA FOR RETENTION OF THE UTERUS IN REMOVING THE ANNEXA FOR SEPTIC DISEASE.*

By Alex. H. Ferguson, M.D., Chicago.

The uterus has an anatomical function after the appendages are removed. Like a suspension bridge, with its supporting ligaments, it efficiently supports superincumbent weight. It is not correct to say that it has nothing whatever to do with the integrity or support of the vaginal vault. Sagging of the pelvic floor is not always the fault of the uterus, and when it is the cause the condition can be prevented or rectified without removing it. If found too heavy or displaced at the time of operation, it should be sutured to the abdominal wall. In discarding an old operation for a new one the primary considerations should be overwhelmingly in favor of the new one. Is the treatment of septic infection of the ovaries and tubes as practiced to-day efficient and satisfactory? Double salpingo-oöphorectomy is a safe operation and cures the vast majority of cases. Its mortality is not more than five per cent. Of my last one hundred cases I lost four. Any one who has uniformly bad results with it should look more closely to his technique; discard silk; amputate the fallopian tubes at the cornua of the uterus, curette the uterus, leave it in a good position, repair the cervix when necessary, and drain through the pouch of Douglas by opening it its full width when necessary. The claim made that drainage is better when the uterus is removed I dispute. The mere assertion does not substantiate their ground. The common experience admitted by all is that the removal of the appendages alone cures the patients pathologically, but symptomatically all are not relieved. The opprobrium of the healing art deals with the ablation of structures and organs that are impaired by disease beyond the hope of recovery by any other known means. An operation is not in this connection a therapeutic agent, but a means of separating the dead from the living, and the abnormal from the normal. If the uterus is normal or curable by other means, why should it be extirpated without at least giving it the benefit of the doubt, should one exist?

The profession generally are being awakened to the fact that operators needlessly remove ovaries and tubes to cure symptoms referred to the pelvic organs. Howard Kelly ("Annals of Gynæcology and Ped.," January, 1894) said 15.5 per cent. of the last two hundred

*Read before the Chicago Gynæcological Society, February 19, 1897.

cases sent him for operation had no pelvic disease. This is common with all of us; but Williams ("New York Journal of Gyn. and Obstet.," August, 1893), a pathologist, examined three hundred ovaries and tubes removed by five different operators and found absolutely no anatomic ground for removing at least sixty of them. In France this form of practice appears to be more common than here. Laying all such evidence aside, we cannot but admit that in a considerable percentage of cases giving a history of gonorrhœal or puerperal infection, we are not sure of our diagnosis even when examined under anæsthesia, and it is not until we open the abdomen and handle the bare organs that a decision is arrived at whether they should be removed or not. Even then, sometimes, we are in doubt on account of the little macroscopic changes observed. Under these circumstances quite a few normal ovaries and tubes are being sacrificed every day, not, I believe, with the intent of mutilation, but having the long suffering of the patient in mind the surgeon is ardent to do something substantial for her. This points out the necessity of exhausting every curative measure before opening the abdomen. I have seen the uterus, tubes and ovaries extirpated for a supposed pyosalpinx, and afterwards not a trace of disease could be found. This is not liable to happen with the experienced abdominal surgeon well versed in pathology and general medicine. The points I wish to make are (a) the difficulty, even when the abdomen is opened, of telling whether the tubes and ovaries had better be removed when sepsis had been at work, on account of these organs sometimes recovering themselves. A number of infected cases do get well, and (b) when a doubt exists regarding the adnexa, how much more difficult it is to tell what uterus will or will not recover itself or by after-treatment.

The surgeon who makes up his mind to remove the uterus because the tubes and ovaries are hopelessly diseased will ablate many a normal uterus on acount of the difficulty of making an accurate diagnosis of the amount of damage, if any, that organ has eventually suffered from the infection. In my experience one class of cases not completely relieved of their symptoms after salpingo-oöphorectomy had comparatively little changes pathologically, but had marked neurotic disturbances. It is my opinion that these cases would not obtain any additional relief were their uteri removed. A case came to my clinic a short time ago whose ovaries and tubes were (according to her story) removed for disease without relief, then her uterus was condemned and cut out. But here she was complaining of the same old symptoms and asking for another operation.. Some cases get what we might call the "operation habit," and are anxious to go under the knife at any time. I do not consider it a very bold thing

to assert that even the most radical and sweeping operations on the uterus and appendages will not symptomatically cure certain cases of septic pelvic disease. It must be remembered that afferent nerve impulses will be carried by the remaining structures, and that sometimes the messages are efferent when the contents of the pelvis are not at fault at all. A microscopic examination of the material scraped away from the uterus does not help us in cases of pyosalpinx in determining whether hysterectomy should be done or not, unless there be recurrent polypi, or some condition foreign to the septic infection. A diagnosis of a tender, enlarged, or displaced uterus is not a sufficient reason to recommend a radical operation. Sub-involution is usually the paramount cause in these cases, and the endometritis or metritis only of secondary consideration.

Atrophy of the uterus follows castration sooner or later. There is abundant clinical proof of this, and it is supported by the laws of nutrition governing other tissues and organs of the body when the blood supply and innervation are interfered with by accidents or experiments. Solokoff's (Arch. für Gynak., Bd. 1, H. 2, 1896) experiments are very interesting and conclusive on this point. He favors the theory that the atrophy follows the disturbance of nutrition in the uterine tissue secondary to extirpation of the ovaries on account of interference with the innervation, vasomotor or trophic centres, in the ovaries themselves. Be this as it may, when the normal stimulus of ovarian influence is suspended by the climacteric or by castration, the regular rhythmic contractions cease, and muscular atrophy results. The endometrium is not so much influenced by this phenomenon. It is supposed to be presided over by a special nerve centre, which is an additional reason for thoroughly treating the interior of the uterus during and after removal of pus tubes and ovaries. It is claimed by the supporters of the radical operation that chronic endometritis prevents uterine atrophy after castration, but they have not shown this to be the case. On the contrary, we can point out that the natural result of endometritis and metritis with uterine hyperplasia, etc., even when left alone, is for atrophic changes to occur, which are hastened by the natural menopause and not infrequently effect a spontaneous cure, and these changes are also favored by oöphoro-salpingectomy.

That inflammatory conditions of the uterus are greatly benefited by the removal of the pus tubes cannot be denied. The prognosis of the uterus should be considered from the standpoint of the etiology of its disease. In acute septic puerperal endometritis and metritis, producing more or less septicemia and the symptoms not abating, with curettage and douching and endangering the life of the woman,

immediate hysterectomy is demanded. Puerperal metritis is often gangrenous and very fatal, to counteract which a radical operation is called for. A less degree of pyogenic (staphylococci and streptococci) infection occurring after early abortions, use of the sound, trauma, etc., causes chronic purulent endometritis. It is often amenable to treatment. "Conception has taken place five days after a curettage for purulent endometritis" ("American Textbook of Gynæcology," p. 234).

The prognosis in acute gonorrhœal endometritis is more favorable. Sloughing does not take place. The gonococci do not readily extend into the mucosa or lymph spaces, but remain on the surface, occupy the follicles, and are found beneath the epithelium. I do not know that a fatal case of primary gonorrhœal endometritis has ever been reported. The uterine mucosa offers a marked resistance to the gonococci, which are more at home in the urethra and vulvo-vaginal glands; hence true gonorrhœal corporeal endometritis is comparatively rare. A mixed infection is more common. Although Madlener (Mercredi Med., 1885, No. 41, p. 487) and others have shown that the gonococcus of Neisser is capable of penetrating muscular tissue from the endometrium in puerperal cases, causing parenchymatous metritis, still it soon dies in or passes away from the muscular tissue, but remains for years in mucosæ if not very thoroughly treated. It appears to me that the profession can concur in the opinion that after removal of pus tubes hysterectomy is not indicated for endometritis alone, whether septic or specific in origin. This brings us to the real bone of contention, the inflamed uterus itself. There is a chronic metritis. What should be done to it? Tait says ("Diseases of Women and Abdominal Surgery," p. 123): "One might almost say in ninety-nine out of every hundred the chronic metritis is accompanied by and directly due to sub-involution of the uterus after labor or after miscarriage." On page 123 he says, regarding sub-involution, that "ninety per cent. will yield to this treatment (previously mentioned), and the rest will yield to the curette and cautery."

Martin ("Diseases of Women," p. 243), in speaking of chronic metritis, says: "The uterus undergoes involution, the chronic metritis gets well, and very often there is obtained by this means (amputation of the cervix) not only relief from the immediate suffering, but also a very favorable effect on the general condition. The women bloom again, and recover health and complete ability to perform their duties." "In the case of a reasonable patient, who appreciates what is at stake and is anxious to regain her health, it may be regarded as favorable" (Thomas, p. 322). "The treatment of the two

conditions is identical"—that is, metritis and endometritis. ("Amer. Textbook of Gyn.," p. 241).

"Whatever may be the explanation, the fact is undeniable that the volume of the uterus diminishes after every operation upon its neck, as I have often observed after the operations of Simon, Schroeder and Emmett" (Pozzi: Chapter on Chronic Metritis, p. 206, Vol. I., "Med. and Surg. Gynæcology"). This has been my experience.

Castration as a means to cure chronic metritis with hyperplasia was recommended and successfully practiced by H. Fritsch (Deut. Chir., Leip., 56, p. 343). Péan claims (Gaz. des Hop. 1886, p. 1170) to have had better results with vaginal hysterectomy for chronic metritis and not removing the ovaries when these were not inflamed.

To my mind Thomas gives about the proper prognosis in chronic metritis.

In speaking of sequelæ of the removal of ovaries and tubes, Lucas-Championnière says that pain persisted in only eight per cent.; pyosalpinx cases gave best results, pain always ceasing; catamenia persisted in twenty-two per cent. The number of cases for data, 268 (Pinesse, ii. F. 77, 78). Many of the sequelæ are caused by not properly caring for the patients before and after operation, or, indeed, to the bad technique of the operator.

In discussing a paper on "Vaginal versus Abdominal Section for Pus in the Pelvis" ("Medical News," November 21, 1896), Dr. L. S. McMurtry says that the sacrifice of the uterus in the majority of cases of suppurative pelvic inflammation is unnecessary. While there are undoubtedly puerperal cases with suppurative pelvic inflammation, where it was necessary to remove the uterus, it was not so to such an extent as to make it a rule that this organ should be taken out. Surgery should be confined within the limits of removing only such diseased tissue or organs as are necessary for complete cure.

Dr. W. E. B. Davis says that total ablation of the uterus and its adnexa is unnecessary in many instances in which it is practiced by some surgeons.

Dr. Louis Frank ("American Gynæcological and Obstetrical Journal," Vol. IX., p. 450) says that vaginal hysterectomists tell us that in all cases of bilateral disease the uterus should be removed, as without the tubes and ovaries it is a useless organ, capable of doing much harm, and so long as it remains the patient will never be permanently cured. This, however, in his opinion, is a fallacy. If the uterus is practically normal, if it is not in a septic or diseased condition, there is absolutely no indication for its removal. There would be just as much reason, if removal of the testicles became nec-

essary, to remove a man's penis to effect a permanent cure for double orchitis. You might as well remove the appendages in all those cases where it was necessary to curette the uterus for a septic endometritis; the indications are just as plain as in many where the opposite exist. As a matter of fact, if the uterus is not in a septic condition, and even if it is septic, so far as the endometrium itself is concerned, which latter may be relieved by curetting at the time of the abdominal operation, we will find that with the tubes and ovaries completely removed, an artificial menopause being brought about, the organ will undergo the same retrograde changes that we find occurring at the climacteric. Men who have failed to get good results by abdominal removal of the appendages with a normal uterus have done so on account of lack of proper technique.

Dr. Reuben Peterson, in an article entitled "Treatment of Pelvic Suppuration by Abdominal Section Without Hysterectomy" ("American Journal of Obstetrics," Vol. 34, 1896, p. 31), says it is not good surgery to establish a universal rule that whenever the appendages are removed for bilateral inflammation the uterus also should be sacrificed. The interests of the patient are paramount. To his mind it is simply a begging of the question, an intellectual shirking of a difficult surgical problem, to adopt a universal rule that the uterus should be removed whenever both appendages have been sacrificed. Polk and others claim that the uterus under these conditions is a useless organ, and should therefore be sacrificed, because *some* cases fail of cure without this additional procedure.

We have passed beyond the developmental stage of hysterectomy. The operation has been so perfected that in the hands of experts the mortality is not increased over that attendant upon bilateral salpingo-oöphorectomy. On the other hand, so much better, in his experience, is the convalescence in cases where the uterus has been removed that it is a temptation to do so in every case. But the conservative surgeon must needs hold his hand. We should not talk too lightly about this functional uterus after its appendages have been ablated. There is a possibility that its importance and influence over other parts of the body is but little understood at the present time, and that future investigations will make us repent having sacrificed the organ except for the strongest pathological reasons.

There are but four classes of cases where he would consider it justifiable to remove the uterus when both appendages have been sacrificed for purulent disease:—

1. When the uterus is so diseased that less radical procedures than hysterectomy probably will fail to relieve the patient of subsequent suffering.

2. When the appendages are tubercular. In these cases we are dealing with a serious disease, which should be treated by the most radical measures.

3. Where the peritoneal covering of the uterus, and even the body of the organ itself, has been badly injured by the enucleation of the purulent appendages. Here the danger of subsequent bowel adhesions and intestinal obstruction might decide one to perform hysterectomy.

4. In some bad cases of pus tubes it may become necessary to remove the uterus for the purpose of securing free vaginal drainage.

In all other cases he would advocate a thorough curettage and retention of the uterus.

Dr. L. H. Dunning, in a paper entitled, "Shall Hysterectomy be Performed in Inflammatory Diseases of the Pelvic Organs?" ("American Journal of Obstetrics," Vol. 34, 1896, p. 499) says that hysterectomy in inflammatory disease of the pelvic organs resulting in suppuration is sometimes indicated will be generally admitted, but that it is the preferable method in the larger number of cases few will at present claim. That in proper cases the extirpation of pus tubes, neoplastic and suppurating ovaries, neoplastic and suppurating uteri, are life-saving operations, none will deny; but that in inflammatory diseases of these organs all of them should be sacrificed because one or two of them are diseased is unscientific, unsurgical, and morally wrong.

He opposes hysterectomy, as a rule, in inflammatory diseases of the pelvic tissues upon the following grounds:—

1. The uterus is the central organ of the reproductive system, and should not, except for palpable and urgent cause, be extirpated.

2. It is only in rare cases that the uterus is so far diseased as to resist the curative effects of appropriate treatment.

3. The removal of the uterus profoundly affects the nervous system and emotional nature of young women deprived of this organ.

4. We oppose the removal of the uterus from anatomical reasons, to wit: As a result the vagina is shortened, the anatomical relations of the bladder, sigmoid and rectum are changed, the elasticity of the pelvic diaphragm is greatly diminished or entirely removed, the elastic tissue being largely replaced by sensitive scar tissue.

5. In married women it often disturbs the sexual relations of husband and wife, and is apt to induce mental depression.

6. Vaginal hysterectomy compels the use of drainage because of the necrosis of tissue and suppuration induced.

Dr. E. F. Fish, in a paper entitled "Shall the Uterus be Left *in situ* in Excision of the Adnexa?" (Vide, p. 738) says that the uterus

should not be removed if found healthy after excision of the appendages. His conclusions are:—

1. That whenever it becomes necesary to excise the uterine adnexa, if the uterus is sound, leave it.

2. Whenever we excise the tubes and ovaries, and the uterus, although in a pathological condition, in our judgment will yield to treatment, leave it.

The reasons of Dr. Fish for leaving the uterus are: That it helps to maintain the woman's sexual integrity. It relieves the patient of much mental strain and is a prophylaxis to neurasthenia, melancholia and insanity. It tends to maintain the family ties unstrained. It obviates the possibility of vaginal hernia, cystocele, and proctocele, and delays vaginal atrophy. Lastly, it holds up and prevents shortening of the vagina.

In a discussion before the American Medical Association ("Journal American Medical Association," Vol. 28, 1896, p. 297) on "Hysterectomy as an Accompaniment to Bilateral Removal of the Appendages." Dr. Edwin Walker says that the number of uteri which give trouble after the removal of the appendages is small. From his own experience he could recall but two cases, and in both of these there was a persistent purulent discharge. Neither of them had been operated on since. But because in these rare instances we have such cases that are not cured, it is by no means a just conclusion that all should be treated by total extirpation.

Dr. W. E. B. Davis (Vide, p. 298) says that while many hysterectomists tell us that the uterus has no function after the removal of the appendages, they have not demonstrated this, and on the contrary we know that the sexual life of the woman is very much better preserved by leaving the uterus, and that the mental effect is also much better. Because some patients are not completely cured by the removal of the appendages is no argument for hysterectomy in every case where the bilateral operation is required, for nearly all these can be relieved by a thorough curettage.

Dr. J. W. Bovee (Vide, p. 299) does not believe it necessary to remove the uterus in but few of the cases in which the appendages are taken out. He has cured nearly all the cases he has operated on. He usually curettes first, and then, putting the patient in proper position, does the abdominal operation.

Dr. L. S. McMurtry says it is a higher standard of surgical art which, while removing diseased and disintegrated structures, preserves all organs capable of restoration to normal structural integrity. This is not sentiment, but a great principle of surgery which should be generally applied. To remove the uterus for suppurative

disease of the uterine appendages, upon the basis that after the ovaries and tubes have become disintegrated the uterus is no longer useful, is a violation of this principle. He had seen uteri exhibited to medical societies which had been removed under those conditions, and which presented no evidences of positive inflammatory lesions, while the suppurating tubes and ovaries, with adhesions and multiple pus sacs, were left to the chances of gauze drainage.

Dr. H. N. Vineberg, in an article on "Conservative Surgery upon the Uterus and its Adnexa through the Vaginal Route" ("American Medico-Surgical Bulletin," March 7, 1896, p. 316), says that it has been the custom with many operators for the past couple of years to excise the uterus also when both appendages are hopelessly diseased and have to be ablated. This practice has in a measure been attended with better results than when the appendages alone were removed. Still, as experience accumulated, it was learned that even when the uterus and appendages were cut away, some of the patients were not cured of their former pelvic pains and nervous disturbances. The thought then forced itself upon the workers in this field that the failure to cure depended upon the extent of the diseased tissues, and not upon any shortcomings of the operation. Remove as much of the pelvic contents as one could, there always necessarily remained some tissue behind which had been pathologically changed by the preceding diseased processes. There must be some peritoneum, cellular, and lymph tissues, blood-vessels and nerves left after the most radical operation, and these being diseased are sufficient to keep up a certain degree of ill-being.

Already at an early stage of operative gynæcology the thoughtful operators bent their energies toward conserving as much as possible the functional organs of women, and there arose what is commonly known as "conservative pelvic surgery."

Glittering generalizations instead of true indications for so important an operation as hysterectomy, will not suffice. The Péan-Baldy-Polk operation has not been recommended to save life, or tissue, or organ. It has not been presented with any overwhelming reasons which appeal to our knowledge of anatomy, physiology, pathology, or the art and science of surgery as being just the right thing in the critical light of modern research. Past experience, as recorded by the master-minds, votes against it. In all seriousness, this so-called radical operation is a retrograde step. A speedy return to rational and scientific pelvic surgery cannot for some time atone for the damage already done. It puts me in mind of the days when amputations and excisions were so rampant for diseases of the extremities which to-day we cure and save.

My own practice is to perform oöphoro-salpingectomy more frequently by the abdominal route than by the vaginal. Before opening the abdomen the uterus is curetted and the cervix, when deemed necessary, repaired or amputated. When time is an important element to the safety of the patient, the operation on the cervix is left to be done subsequently. In removing the pus-tubes and ovaries, the proximal end of the tube is amputated down to the uterine mucosa. If denudation has been extensive in the pelvis, drainage is established through the vagina. The cul-de-sac of Douglas is opened broadly, so that a Mikulicz packing may be used per vaginam. A tube is used as well. If the curettage and amputation of the cornua and cervix do not relieve the uterus of its tenderness and reduce its size within a short time, intra-uterine medication is carried out systematically until the endometritis and metritis are symptomatically cured. This takes one, two, or rarely three months after recovery from the operation. If the discharge, pain and tenderness return a second or even a third curettage is carried out, rather than recommend the removal of the organ in a young person. Should the woman be near forty years of age, and the metritis prove very obstinate, I then, fearing malignancy, recommend hysterectomy, but not until all other means have failed.

The disadvantages of primary hysterectomy, in addition to removal of pus-tubes and ovaries, are:—

1. It takes longer to do the operation, and the mortality is, in my opinion, higher.
2. The primary hemorrhage is greater and the secondary more liable to ensue.
3. Greater shock.
4. More liable to injure ureters, bladder and rectum.
5. The patient is less of a woman, anatomically and socially.
6. The vagina is shortened.
7. Hernia of the vagina is liable to follow. I had such a case quite recently.
8. A healthy uterus is often removed on account of the difficulty of diagnosing, beforehand, the amount of disturbance caused by the inflamed tubes, ovaries and uterus respectively.

A CONTRIBUTION TO THE TECHNIQUE OF OPERATIONS FOR THE CURE OF LACERATION OF THE PELVIC FLOOR IN WOMEN.*

By Charles P. Noble, M.D.,
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I wish to present to the Society the results of my work in the repair of injuries to the pelvic floor in women, due to lacerations sustained in labor. The first operations which I performed were done according to the technique of Hegar. The results secured when there was much injury to the pelvic floor were very unsatisfactory. I then learned the Emmet operation, and found this a very great improvement over that of Hegar. I followed the technique of Emmet, as taught me by Dr. Kelly, for five years. I visited Dr. Emmet, who kindly showed me the operation, and I also saw it performed by Dr. Baldy and others. Five years' work with the operation convinced me that, while it is a great improvement upon any other operation in general use, it falls short of the ideal in several particulars. First, it shortens the posterior wall of the vagina; second, and more important, it fails to restore to structural and functional integrity that portion of the levator and muscle which unites in the median line between the vagina and rectum.

The anatomists teach that a slip from the levator ani on each side meets its fellow in the median line between the vagina and rectum, the ends uniting by a tendenous termination to each other and also to the external sphincter. In addition to this muscular union, we have the union of the transversus perinæi muscles, and the more superficial bulbo-cavernosus muscles. We are also taught that certain slips of the levator ani are inserted into the lateral walls of the vagina and rectum. These structures, together with the pelvic fasciæ, are those which are injured in lacerations due to child-birth.

A service of five years at the Philadelphia Lying-in Charity, early in my work, gave me excellent advantages for studying the real nature of lacerations of the pelvic floor. I found, as have other observers who have studied fresh lacerations, that these involved, almost without exception, the tissues of one or both sides of the vagina. The more superficial lacerations may involve merely the skin and subcutaneous tissue about the fourchette. This is a median laceration. It is also true that lacerations which go through

* Read before the Philadelphia Obstetrical Society, Feb. 4, 1897.

the sphincter may extend upward along the median line of the vagina. With these two exceptions, I have never seen a laceration which extended up the middle line of the vagina; on the contrary, at or about the plane of the hymen the laceration is diverted to one side or to both sides, and tears along the lateral sulci. The laceration may extend up one sulcus or both sulci. From this it is plain that the structures which are torn are the transversus perinæi muscles, the pelvic fasciæ, the slips from the anterior border of the levator ani which unite to each other in the median line, and it may be more or less of the levator ani on each side above and behind, where the muscle is attached to the vagina or rectum. I have seen lacerations which have torn widely through the levator ani and extended backward so far as to be entirely behind the rectum. Two lacerations of this character have come under my observation. In one the sphincter muscle was torn, in addition to the deeper structures.

Having had the opportunity to study lacerations, I was quite prepared to accept the teaching of Emmet. Denudation, according to his technique, covers about the area involved in lacerations, and it seemed to me a logical method of operating. It gives an opportunity for the fresh attachment of the vagina to the levator muscles. It rolls in the everted structures when rectocele is present, and it gives an elastic pelvic floor. Other advantages are that primary union is almost invariably secured, and the amount of pain following the operation is, as a rule, not great. A very considerable experience with the operation, however, convinced me of its shortcomings. To shorten the vagina is a matter of some importance in all cases, and in cases of procidentia it is a matter of very considerable importance. It has a tendency to pull the cervix forward, and to favor retroflexion of the uterus. The most important objection to the operation, however, is that it fails to bring together the muscular structures in front of the rectum and anus which are normally present, and therefore it cannot restore the function of the pelvic floor perfectly. Having once satisfied myself of this fact, I began to diverge from the technique laid down by Emmet, along the lines which have led to the present method of operating, which I shall present to you. Before leaving the question of Emmet's operation, it will be well to point out wherein this operation must necessarily fail to give perfect results. The operation must necessarily fail to bring together the torn ends of the levator ani, because the denudation is not deep enough to reach this muscle. No directions are given for exposing them and sewing them together, and therefore this is not accomplished. The same is true, of course, of the transversus perinæi muscles. Not only is this true, but the method used

of introducing the crown stitch of itself would prevent union of these structures, even though the denudation were properly made, because this crown stitch, introduced as it is from the skin surface of the labium, passes through the vaginal tissue just within the plane of the hymen, skips over the muscular structures, and is introduced into the central tongue of tissue, which is to form the posterior wall of the vagina, and then emerges through the opposite

PLATE NO. I.

The denudation is shown with the tissues dragged downward and outward by the lateral tenacula. The labia are drawn apart, and the lower border of the denudation is made tense, thus altering the actual outline of the denudation. The plane of the tip of undenuded mucous membrane on the posterior vaginal wall is one-half inch above the plane of the hymen.

Two sutures are shown which close the angles of the denudation in each sulcus. These sutures are passed superficially and embrace only mucous membrane and connective tissue.

vaginal and labial structures to correspond with the method of its entrance. When this stitch is tied it inevitably results in dragging the central undenuded tip of mucous membrane downward and in between the structures of the vaginal outlet, necessarily keeping their torn ends apart, and preventing union. These two objections are fundamental to the Emmet operation, and result, especially when the operation has been done for extensive lesions in the pelvic floor, in a vaginal outlet which tends to gape, and which never has the contractility of the normal pelvic floor.

Emmet, in his work on gynæcology, in describing his perineal operation gives no direction for any special effort to secure the torn muscles; and, in fact, in describing the operation makes no mention of the muscles at all. He lays particular stress upon the pelvic fascia, and the relation of the pelvic fascia and connective tissue to the support of the pelvic blood vessels. He alludes to injuries of the levator muscles in discussing the papers of Dr. Schatz, of Rostock, and Dr. Hadra, of Texas, but not in his own systematic description of injuries of the pelvic floor, or in the description of his operation for their repair.

The operation for the repair of injuries of the pelvic floor which I have done for the past three years may be described as follows: The caruncula myrtiformis upon each side is caught with a bullet forceps, and care is taken that the forceps are placed internal to the orifices of the vulvo-vaginal glands A point upon the crest of the rectocele is now taken, which, when gently pulled upon, will come up to the orifice of the urethra, at the same time putting the posterior wall of the vagina on the stretch. When this has been determined, the posterior wall of the vagina is seized a half inch above this point. (It will be observed that this point upon the rectocele is half an inch higher up the posterior wall than is the case in the denudation for Emmet's operation). The parts are denuded with scissors as in Emmet's operation, especial care being taken to denude deeply with scissors over the ends of the torn levator and transversus perinæi muscles. The method which I follow is to make an incision with the knife from one myrtiform caruncle to the other, internally, to the labia minora. By neatly outlining the lower border of the denudation, a more accurate approximation of the wound externally can be secured. Emmet's directions for making the denudation should then be followed; that is, the bullet forceps upon one side, and that holding the crest of the rectocele, should be pulled down, and the mucous membrane between and external to these two forceps as far down as the incision made by the knife should be removed. Then the sulcus upon that side is denuded Care should

be taken not to remove too much tissue from the sulcus, as otherwise the vagina will be too greatly narrowed. By making traction upon the two bullet forceps, a fold will be formed starting from each

PLATE NO. II.

The superficial sutures which close the upper angles of the denudation have been tied. The knots are shown deep in sulci.

The anterior border of the levator ani muscle is shown upon each side. The illustration exaggerates the prominence of the muscle.

Two sutures are shown in each sulcus. These sutures should reattach the vaginal and the lateral rectal walls to the levator ani muscle. In addition, they should be so introduced as to draw back into the sulci the lax tissues of the vaginal outlet. To do this the sutures are passed deeply through the muscle—passing through it from within outward and then from without inward—to gain a point. Then the sutures are passed through the lax tissues upon the median side of the sulcus in front of the rectum. When the sutures are tied the lax tissues are drawn back and lifted against the levator muscle—the fixed point. These sutures are not V-shaped. The lower half of the external leg of the V is omitted to increase the efficacy of the suture in rolling back and lifting the lax tissues against the levator muscle. In the illustration the buried portion of each suture is shown by dotted lines.

forceps and meeting in the depths of the sulcus. This, in a general way, outlines the tissue to be removed, but experience is necessary to enable the operator to denude accurately. It is best to err on the side of removing too little than too much. The tissues of the opposite sulcus are denuded in a similar way. It is well to repeat that the denudation should be deep over the ends of the levator and transversus perinæi muscles, and it is well also to denude deeply just above the external sphincter muscle. In addition to this denudation the fascia is split with a scissors on each side along the anterior border of the levator muscle, and this muscle is fully exposed and drawn out with forceps for inspection It is best, however, to omit this procedure until the upper stitches are placed.

The upper angle of each sulcus is closed with catgut stitches. In starting the sutures it is essential to observe the relations which the undenuded central portion of the vaginal mucous membrane will bear to the lateral wall of the vagina, and the sutures must be so introduced that the lower end of the undenuded vaginal mucous membrane will lie a half inch above the plane of the hymen. Having closed the angles of the sulci (which are opposite that portion of the levator muscle which arises from the obturator foramen, and which is very seldom torn), we now come to the important part of the operation. The levator muscle should be carefully felt and its relations distinctly outlined. The needle is introduced near the border of the vaginal mucous membrane, passed directly through the muscle, then for a short distance behind it and in a direction from the point of entrance toward the anus, and then through the muscle again from behind. This gives a firm hold upon the levator muscle to draw back into the sulci the lax tissues resulting from the laceration. The needle now is passed into the tissues on the median side of the sulcus at a plane considerably below the point of emergence from the levator muscle, and is then run from below upward and from without inward, along the sides of the rectum, to correspond with the point of entrance. This suture, when tied, lifts upward and backward the lax tissues and fastens them firmly against the levator muscle. The union here, however, is only mediate, as the muscle is not denuded of its fascial covering. As a rule, two sutures passed in this way in each sulcus are sufficient to reattach the vagina to the levator muscles and to draw back all of the slack tissues into the sulci. This part of the operation corresponds very closely to Emmet's, the difference being in the way the sutures are passed through the levator muscle. They are not passed in the shape of the letter "V," as is done by Emmet, but the object is to get a firm hold on the levator high up, and then sew the lax

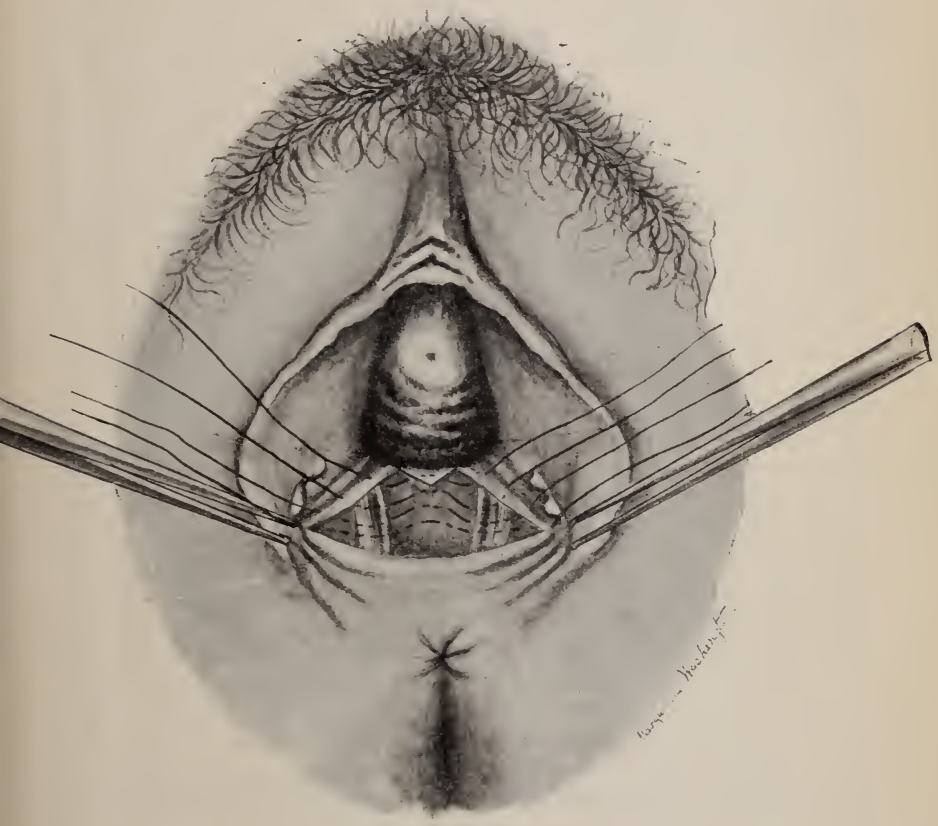

PLATE NO. III.

The sutures shown in Plate No. II have been tied. The tip of undenuded mucous membrane on the posterior wall of the vagina is shown one-half inch above the plane of the hymen.

The anterior border of the levator muscle is shown upon each side. The fascia covering the muscle has been split, and its border reflected inward. For the sake of clearness in the illustration, this exposure has been exaggerated.

The upper stitch shown is the crown suture, which is passed superficially and embraces only mucous membrane.

The second suture shown is passed superficially through the vaginal mucous membrane, and through the anterior border of the exposed levator muscle, from which it emerges to catch the tissue in the median line in front of the rectum. It is now passed through the tissues of the opposite side in a corresponding manner. That part of the suture which is buried is indicated by the dotted lines.

The third suture is passed like the second. It brings together the torn ends of the levator muscle; or the anterior borders of the muscle which are brought from the depths of the sulci.

The fourth suture is introduced at the plane of the hymen. The structures of importance at this plane are the pelvic fascia and the transversus perinæi muscles. This suture is passed entirely below the plane of the levator muscle.

tissues upon the median side of the sulcus firmly against the levator muscle. These sutures must leave the anterior border of the levator free. At this stage it is best to split the fascia and expose the anterior border of the levator, and to bring out by the forceps either the torn ends of the levator or the anterior border of this muscle from the depths of the sulcus. A superficial suture is now passed through the border of vaginal mucous membrane, through the tip of the undenuded mucous membrane in the middle line and out again through the vaginal mucous membrane on the opposite side and tied. This suture is placed a half-inch within the plane of the hymen, that is more than a half inch above the crown stitch in the Emmet operation, and it embraces mucous membrane only. All of the sutures heretofore mentioned are tied as soon as introduced. A suture is now passed through the vaginal mucous membrane, through the anterior border of the levator muscle, then through the tissues just anterior to the rectum, in the middle line, out again through the anterior border of the opposite levator muscle and through the vaginal mucous membrane, to correspond to the point of entrance. A second stitch is now introduced to correspond to the first one, which catches the torn ends of the levator muscle or the anterior border of the levator deep in the sulcus, again catches the tissues anterior to the rectum in the middle line, and emerges upon the opposite side in a corresponding way. This last stitch is passed just above the plane of the hymen. A third stitch (and sometimes a fourth one) is passed about the plane of the transversus perinæi—in other words, just below the hymen—to bring snugly together the deep structures at this point. These sutures are now tied. When tying them a tenaculum is placed in the middle line with which to press back the tissues just anterior to the rectum to permit the approximation of the lateral structures in the median line, under the guidance of the eye. That which is essentially new in the operation includes the exposure of the muscles, the character of the denudation and the method of introducing the sutures at this point. The undenuded strip of mucous membrane on the posterior vaginal wall has been fastened by suture above the plane in consideration, hence there is nothing to prevent the central union of the lateral structures, which are brought together under vision. These sutures also assist in attaching the lateral walls of the vagina and rectum to the levator. When the above-mentioned sutures have been tied, a few others are required to close the wound in the skin perineum, which contains no structures of importance, and is sutured in the usual manner. I have been in the habit of using catgut sutures for the angles of the sulci, silkworm gut for the sutures which pass through

the muscular structures, and silk for the external skin perineum. Experience and judgment are necessary not to overdo this operation, and to drag together in the median line much more of the levator muscle than is naturally in apposition. It is quite possible to do this, but it is desirable to do so only in women having procidentia, especially elderly widows.

I am experimenting at this time to see if the operation cannot be further improved in such a way as to restore the anal cleft, which, as is well known, is more or less obliterated by the sagging downward and backward of the pelvic floor, when the muscular structures are seriously injured. Emmet's operation does not influence this con-

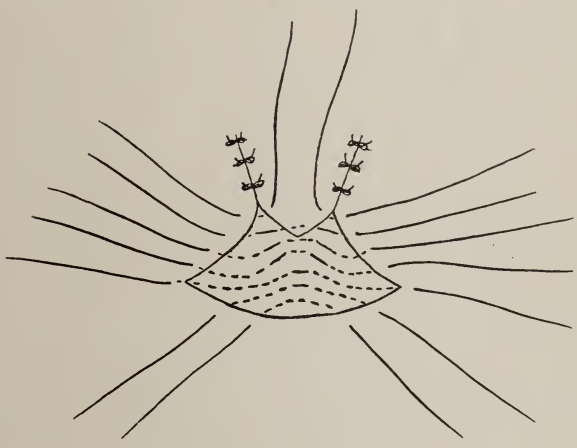

PLATE NO. IV.

All the sutures shown in the preceding plates are diagramatically indicated, with addition of the superficial sutures to close the remaining wound.

dition in the least; it neither draws the anus forward nor upward. I intend to try and secure union between the torn ends of the levator, or certain fibres from its anterior border, and the external sphincter muscle, in this way restoring the parts to their normal condition. As yet, my experience in this direction is so limited that it is not worthy of report. The method adopted has been to denude deeply over the anterior or perineal aspect of the sphincter muscle. Then to pass a suture from the skin surface of the perineum, making it pass through the exposed surface of the sphincter, then through the torn end of the levator upon one side (or the exposed border of the muscle), then in a reverse way upon the opposite side out to the skin surface of the perineum. When this suture is tied, it is evident

that it will bring the levator muscle in apposition with the external sphincter, and, depending upon the nature of the denudation, the union secured will be mediate or immediate. Heretofore I have introduced this suture early in the operation, but have not tied it until all other sutures have been tied. This field of investigation seems to me worthy of trial and of further report.

I have endeavored to point out wherein I have adopted the theories and technique of Emmet, and wherein I have departed from them. All those who do plastic surgery must be under permanent obligations to Dr. Emmet for his work in this field. Undoubtedly he has done more than all others combined to put this work on a substantial basis. No one recognizes this more fully than myself. The operation which I have described, I regard as an evolution from the operation of Emmet. The new feature in it is the attempt (which can be made successful) to restore the muscular structures to approximately their normal condition, instead of merely resecting the relaxed vaginal outlet, as is done by the Emmet operation. So far as I know, the muscles have never been systematically dissected out as I have recommended. Indeed, I have been told in society discussions (although I was systematically doing the operation) that this is impossible, because the muscular structures are atrophied. It seems probable that Emmet's technique has been influenced by his well-known views upon the pathology of diseases of women; namely, that most of their symptoms are due to lack of support of the pelvic blood vessels by the fascia and connective tissue. The operation, as I have done it, I believe, is based upon an anatomical foundation, and not upon any theory of pelvic pathology.

MEMBRANOUS DYSMENORRHŒA.*

By W. L. Dunning, M.D., New York.

This is an infrequent disease, but little understood, intractable to treatment, and very distressing to the patient. As its name implies, it is characterized by the discharge of a membrane at each menstrual period, attended with pain. It is generally conceded that the membrane is an exfoliation of the uterine mucous membrane, either the superficial layer or its entire thickness, which may be passed in shreds or *en masse*; although it is believed by some to be an inflammatory exudate taking on the mold of the uterine cavity. The latter theory probably has but few adherents at the present day. The membrane, when passed entire, is triangular, or the shape of the uterine cavity above the internal os, having three openings—the ostia of the fallopian tubes and the one corresponding to the internal os. It is villous on its outer surface, owing to the extremities of blind tubular glands, smooth on the inner side which represents the mucous surface. The microscopic examination shows it to be identical in structure with the lining membrane of the uterine cavity. The pain is of a spasmodic or expulsive character, and may be described by the patient as bearing-down or like labor pains. It simulates an early abortion, and may be mistaken for it. The pains have their seat in the uterus, due to the uterine contractions, radiating in different directions throughout the lower part of the abdomen and sacrum, varying in intensity and duration from a few hours to several days. When the membrane is expelled pain and hemorrhage cease at once.

The pathology of the disease is unknown, the theories that have been advanced are various, and often contradictory. The uterine mucous membrane ordinarily is about 1-14 of an inch thick, but as it approaches the menstrual period becomes hypertrophied until it attains a thickness of $\frac{1}{8}$ or $\frac{1}{4}$ of an inch, and if fecundation does not occur, undergoes fatty degeneration and disintegration; but in membranous dysmenorrhœa this retrograde matamorphosis does not take place, but instead the membrane is cast off entire, or in fragments, probably the result of malnutrition. Dr. Oldham, the discoverer of the disease, believed that congestion of the ovaries gave rise to the phenomenon by transmitting an irritant influence to the uterus. The belief that the membrane is a product of gestation is

* Read before the Woman's Hospital Society, January 12, 1897.

disproved by microscopical examination showing the absence of chorionic villi, decidual cells, ovum and other products of gestation, and the presence of structural elements peculiar to the uterine mucous membrane. The etiology is not well understood, probably associated with impairment of iutrition, and consequent deranged innervation. What influence may be exerted by the ovaries cannot at present be determined with certainty. Complications such as edomentritis, subinvolution, displacements, disease of the adnexa, etc., may exist, but do not necessarily stand in a causative relation to the disease.

Treatment has reference to the relief of pain during the passage of the membrane, the treatment of complication and improvement of the general health during the intermenstrual intervals. For the former, sodium bromide, combined with ammonol, phenacetine or acetanilide have been of service in my hands, also the various uterine sedatives, as pulsatilla, fluid extract of viburnum, gelsemium, cannabis indica, etc. While they don't always relieve the pain entirely, they lessen it to a marked degree and quiet the nervous disturbance. Inhalation of sulphuric ether carried to the point of quiescence of the nervous system has been advised, but is open to the same objection as prevails against the use of opium; namely, the danger of forming the habit, and is hardly justifiable. As a curative measure, dilatation of the cervical canal with or without curettage, followed by the application of an alterative to the uterine cavity, such as Churchill's tincture of iodine or iodoform in powder or in glycerine, has been of great utility, and some cures reported(1) following it. Pregnancy has seemed to give relief in a few cases.(2) Galvanism is extolled by some.(3). Complications such as displacement or inflammation of either the uterus or its appendages must meet with appropriate treatment.

As this is probably a constitutional disease, agents to improve the general health will be in order—as iron, arsenic, strychnine, electricity, etc., and of this class the last mentioned has been in my experience the most effectual, as shown in the following case.

Mrs. A., aged thirty; married twelve years; had one child ten years ago; labor and puerperium normal; no miscarriages; general health good; robust, but a trifle anæmic; menstruated for the first time at the age of fourteen; perfectly normal, and continued so until three years after her child-birth, when her health became much im-

1. Skene's Diseases of Women, 5 edition, p. 624. Courty, translation of 3d edition, p. 330, also Thomas and Mundé, p. 632.

2. Courty and others.

3. Keating & Coe's Clinical Gynæcology, p. 795.

paired; lost flesh and strength so much that she feared she had consumption. About the same time the menses became painful, and she began to pass the membranes. At first she considered it a miscarriage, but the recurrences and the opinion of different physicians convinced her that such was not the case. It usually began with cramps in the lower part of the abdomen, described as bearing-down like labor pains, backache and headache, followed by the flow which was at first scanty, with a few shreds, the pains increasing in intensity and acquiring more of an expulsive character, the hemorrhage becoming profuse until about the seventh day, when the membrane was expelled. Pain and hemorrhage ceased at once, with a recurrence every fourth week. During the intermenstrual interval she suffered from pain in the sacrum and in the iliac region of the right side. Physical examination showed evidence of a lacerated cervix that had been repaired a few months before. The os was patent and filled with tenacious mucus. The uterus was enlarged, apparently from subinvolution and chronic congestion, retroverted and bound down by adhesions. The right ovary was enlarged, prolapsed, painful to the touch, and covered over by adhesions. Local treatment of applications of Churchill's tincture of iodine to the vaginal fornix and to the cervical canal, followed by glycerine dressing twice weekly and vaginal douches of hot water twice daily was followed, though not regularly, and without much improvement. Operation was then advised and accepted. On the 10th of March divulsion and curettage was done, with the application of pure carbolic acid freely over the uterine cavity and packing with iodoform gauze followed by a laparotomy. The ovary was liberated from its adhesions with some difficulty, and was so badly injured as to necessitate removal. The uterus was freed from its adhesions, raised and a ventral suspension done. In making a free divulsion the tear in the cervix, that had been repaired only about four months before, was reopened and required a few sutures to close it. A pessary was inserted into the vagina to support the uterus. The uterine packing was removed on the fourth day and replaced by fresh gauze, which was repeated several times in the hope that constant drainage, and the local action of the iodoform might have a beneficial effect. The abdominal wound healed by primary union. The temperature and pulse continued about normal, and the patient got out of bed on the twenty-first day. The pessary was removed on the thirtieth day, and the uterus was retained in its new position. The first menstruation following the operation was very slight and painless, but the second was quite, or nearly, as painful as usual, with the discharge of the membrane, which recurred regularly. Local treat-

ment was resumed, with dilatation of the cervical canal, and the local application of Churchill's tincture of iodine to the uterine cavity once or twice weekly. Iron and arsenic were prescribed, but not well borne. The membrane continued to pass and the patient was almost discouraged, and at times meditated suicide. Hysterectomy was suggested, but refused, on the ground that she would rather be dead than be without her uterus. Electricity was next tried, galvanic current with the negative pole intra-uterine, the electrode carried to the fundus, using from about twenty to fifty milliamperes; this current continued five minutes, slowly turned off and the current changed to the positive for five minutes; repeated twice weekly. The first menstruation following the administration of electricity was marked by a diminution of pain; at second the membrane was reduced more or less to shreds. After the third period no membrane nor shreds passed, and the pain, though not entirely relieved, was slight in comparison. Formerly her suffering was so great as to require the services of her physician at almost every menstruation. At this writing no membrane has passed in four months. The electricity is continued about two or three times monthly as a preventive against a recurrence.

In opening the abdomen, the urachus was encountered and recognized by following it down to the bladder and up toward the umbilicus. The urachus was pushed aside during the fastening of the uterus and closure of the abdominal incision, so as not to include it in the sutures. For three or four months subsequent to the operation the patient complained at times of traction on the umbilicus and frequent micturition, the former evidently due to the uterus drawing downward on the urachus. The urine failed to show evidence of cystitis, so the frequent desire to micturate was attributed to the uterus making upward traction on the vesical neck. These symptoms, though annoying, continued only about three months, and are mentioned as sequelæ that may follow the operation, and, although rare and not permanent, are deemed of sufficient importance to be remembered in connection with other and more serious objections to the operation that need not be mentioned here.

The diagnosis in this case is founded on the following:

1. Recurrences monthly for seven years, although abstinence from sexual intercourse for more than one month at a time had been observed.

2. Repeated macroscopical and microscopical examinations were made to establish the presence of abortion, but with negative results.

SELECTED CASES FROM ONE HUNDRED CONSECUTIVE CONFINEMENTS.*

By J. G. Hirons, M.D., New York.

In submitting without comment the following brief analysis of one hundred consecutive confinements my object is to suggest for discussion the frequent and possibly unnecessary use of both forceps and ergot in many instances, and the unusual severity of the pain and the tendency to post-partum hemorrhage in those women whose last confinement occurred several years previously.

BEFORE PREGNANCY.

Of the seventy multiparæ twenty had one child; sixteen, two; ten, three; six, four; seven, five; two, six, and two, eight. Fourteen had instrumental deliveries, ten being first and four subsequent confinements. In eight cases forceps were used once; in five, twice, and in two cases in all of their confinements, or three and four times respectively. Five had puerperal fever as indicated by their histories of chills, fever and prolonged illness, and the character of the treatment, viz.: uterine and vaginal irrigation, poultices, etc. The entire number gave evidence of having taken ergot during or after confinement. Five women had had trachelorrhaphy and perineorrhaphy, and three had trachelorrhaphy alone; one had been treated for a subserous fibroid the size of an orange attached to the fundus of the uterus, one for procidentia, two for retroversion, and two for retroversion with prolapsed ovaries. Of the thirty primiparæ eight had been treated before pregnancy occurred—two for retroversion, one for prolapsed ovary and five for endometritis.

DURING PREGNANCY.

Ten women were treated with cotton-vaseline tampons from two to four months; two wore retroversion pessaries until the fourth month, and one a cup pessary until the seventh month. In one case of deep unilateral laceration of the cervix and laceration of the perineum I operated on the cervical tear between the sixth and eighth weeks of pregnancy; in another at the fifth month a large mass of varicose veins in each labum and both glands (suppurating) of Bartholin were dissected out, and in another the left mammary gland was

*Read before the New York Obstetrical Society, January 5, 1897.

amputated for carcinoma. One woman, when three and one-half months pregnant, had cystitis which extended to the pelvis of the left kidney.

ACCOUCHEMENT.

In ninety-eight cases the presentation was of the vertex; one was a cross-birth, and one which occurred in the street immediately after leaving a surface car is not known positively, although presumably the first position of the head. Of the ninety-eight known vertex presentations ninety-seven were of the first and one the third position. Chloroform was given in two-thirds of the primiparæ and in only ten of the multiparæ; ether was given in one case. In five cases, two of them primiparæ, no vaginal examination was made during the progress of labor, the position and presentation being accurately determined by external examination; in several cases a single examination only was made. Delivery was by natural means in all but one case, viz.: the cross-birth. Placenta previa occurred once. In two instances the placenta was retained but not adherent, and in eight there were retained membranes, which, with two cases of hemorrhage, makes twelve cases in which I introduced my hand or a part of it into the uterus. The cord was once round the neck in four cases and twice in one case; in one it was broken during delivery, being less than twelve inches long. No child was cyanotic. Forty of the children were males and sixty-one females (one twin, females). One male child had marked depression in the region of the right parietal bone and a small tumor in the sterno-mastoid muscle, with some shortening of the muscle; another, a female, had double ptosis palpebræ, with a slight tendency to webbing of the fingers and toes. The injuries to the cervix in the primiparæ were insignificant, in no case requiring immediate or later operation. Only one out of nineteen cases I have been able to trace remains sterile. In seventeen cases the perineum was torn enough to require from two to four sutures. Vaginal douches were given only in those cases operated on. Two cases, primiparæ, were somewhat unusual in that they did not experience any pain during labor. The cervix and perineum in both were uninjured; the children were of medium size, one a male of eight, the other a female of seven and a half pounds. The women were young, under twenty years, small in stature and athletically inclined, one of them being an enthusiastic bicycle rider. In a subsequent confinement one experienced a fair amount of pain. In a third case—already referred to as having been confined shortly after leaving a street car—the patient had often had attacks of "colic" which were severer and of longer duration; in this case also the pain

accompanying a second confinement was of the usual severity. In one case phlegmasia dolens developed after post-partem hemorrhage. Two children had purulent conjunctivitis, and both mothers have since remained sterile, although there is no evidence of tubal disease. Ergot was given only in four cases, two complicated by hemorrhage, one uterine fibroid and one placenta previa.

The cases meriting description more in detail are the following:—

Case 1.—Mrs. W——, a well-developed woman twenty-eight years old, has been married ten years and has one child nine years old. Since this confinement, which was instrumental, she has not been pregnant. She has a profuse leucorrhœa and the reflex nervous symptoms usually attributed to laceration of the cervix. She sought relief for the excessive vaginal discharge and the sterility. Examination showed perineum intact, bilateral laceration of the cervix and endometritis. While being prepared for the operation to restore the cervix she became pregnant. Gestation was natural, as was also the confinement in its physical features, but she was extremely nervous in the first and hysterical in the second stage. There was positive objection to the use of chloroform, therefore as the child was expelled her restlessness made it necessary for me to give all of my attention to it after directing the nurse to keep the fundus of the uterus under her hand. As I cut the cord the nurse remarked the distended uterus, which I found extended above the umbilicus. There was no hemorrhage externally until I removed the placenta, which was detached and occluded the cervical canal. The uterus was at once emptied of the accumulation of blood, and after gentle but firm massage of its walls it contracted, expelling my hand; but not before the patient began to exhibit by her pallor and disturbed vision and hearing the effect of the excessive loss of blood. Ergot and stimulants were given hypodermically, and stimulants by the mouth and rectum; the foot of the bed was elevated and external applications of heat were made. She made a satisfactory recovery, but could not be dissuaded from nursing the child. Fourteen days after the confinement she complained of pain in both lower extremities, and the day following they began to swell and assume the characteristic appearance of phlegmasia dolens. In two months she had recovered her health, although persisting still in nursing the child, and while she never underwent any operation and has since remained sterile, she seems to be perfectly well at the present time.

Case 2.—Mrs. A——, thirty-one years old, who has been married fifteen years, has had four children, the last eight years ago, and no miscarriages. She was sent to me for operation for laceration of the cervix and perineum, which caused free uterine discharges, ster-

ility, and possibly a tinnitis aurium, which had for five years resisted all medication. Two months after the operations on the cervix and perineum she became pregnant, and when three and one-half months pregnant had a violent cystitis which extended through the ureter to the left kidney. For four weeks she had a temperature of from two to four degrees above the normal, chills, and severe pains requiring large and frequent doses of opium to give relief. She was ten weeks recovering from this illness, in the meantime having lost thirty pounds in weight. Her confinement was marked by the excessive amount of pain complained of, for which chloroform was given. There was no laceration of either cervix or perineum. The child, a female, weighed five pounds and was well developed. Former confinements gave her less pain, although the children were much larger. There was free hemorrhage with the removal of the placenta, and the uterus did not contract firmly until subjected to a certain amount of massage. Ergot was given hypodermically. She regained her health in every respect excepting the tinnitus aurium, which continues at the present time with short periods of relief.

Case 3.—Mrs. A——, twenty-six years old, has been married six years; had one child delivered with instruments five years ago, and has had four miscarriages at from the fourth to the sixth month of gestation. When she came under my observation she was two months pregnant, the sixth conception. She had a show of blood with a profuse vaginal discharge, and was anæmic and feeble. On examination I found laceration of the cervix and perineum, with prolapse of the rectal and vesical walls; the cervix was torn to the vaginal junction on the left side, and the os was patulous. As there was no pain and no sign of uterine contraction she was advised to remain in bed. The flow of blood ceased, and with tonics and the recumbent posture for a week at the expected menstrual time she improved in health. At the fifth month she had pneumonitis of the lower right lobe, but recovered and was able to be about when she miscarried at six and one-half months. After regaining her strength sufficiently she was given a course of treatment in preparation for the plastic operations on the cervix and perineum, but she again became pregnant. When six weeks had passed since last menstrual flow I operated on the cervical laceration, introducing five silver sutures. She had no unfavorable symptoms either immediately after the operation or during the subsequent course of gestation. The confinement was normal, and she has had two living children since.

The cross-birth, dorso-anterior, head to the left, occurred in a patient I had operated on for laceration of both the cervix and perineum less than a year before. Her first and only confinement prior

to this occurred two years before; was instrumental; the child was still-born and was followed by puerperal fever. When I was called to see her in labor she had been having strong uterine contractions for some time, the os was well dilated, and I had no difficulty in doing podalic version under ether. The case of placenta previa was the sixth confinement in a woman thirty-seven years old. The edge only of the placenta presented at the os and the hemorrhage was slight. The head soon became engaged, and labor was completed in a few minutes.

SHOCK IN OBSTETRIC SURGERY.*

By Henry C. Coe, M.D., New York.

In the course of a recent discussion at the Academy of Medicine the criticism was made by one of our oldest and most esteemed specialists that the younger generation of obstetricians was somewhat too prone to adopt heroic methods of procedure under circumstances which did not always justify them. While the brilliant results obtained by such methods would appear to warrant their adoption in skilled hands, there still seem to be grounds for advising caution in recommending them to the general profession.

There is no question that the development of operative obstetrics along the line of general surgery has been in every way rational and commendable. Improved technique has practically eliminated sepsis from the category of operative risks, while rapid work and perfect hæmostasis have reduced the dangers of shock and hæmorrhage to a minimum. But a strict comparison between capital surgical and obstetric operations is legitimate only when the latter are elective—that is, when they are performed at the beginning of labor on patients not already infected and with favorable environment. Under the reverse circumstances they are really emergency operations, and the prognosis is modified accordingly.

Any comparisons of the statistics of the Cæsarean and Porro-Cæsarean operations, for example, or of the statistics of individual operators in Cæsarean section are entirely misleading because of the widely different conditions under which they were performed. One surgeon was uniformly successful because all his cases were under his own control from the outset, while another's heavy mor-

* Read before the Woman's Hospital Society, New York, January 12, 1897.

tality is easily explained when the unfavorable conditions under which he operated are remembered.

In spite of the positive assertions of many cœliotomists, the danger of post-operative shock has not yet been eliminated, whatever may be true with regard to sepsis. A certain number of patients do die, and will continue to die, from shock (*not* from hæmorrhage, as some affirm) in spite of the most approved modern methods. This is pre-eminently true in obstetric surgery, especially in private practice. We cannot close our eyes to this fact in spite of the brilliant results and freedom from risk claimed by the enthusiastic exponents of the *accouchement forcé*. As long as women continue to differ widely in their powers of resistance, so long will some succumb to operative procedures which others sustain with impunity. This is a truism which would hardly need to be stated were it not for the dangerous doctrine of hasty interference which is being preached among us at the present day. A fact which we are constantly losing sight of is this :—that hospital statistics are not susceptible of comparison with those of private practice, above all in obstetrics. As well compare the nervous system of a stolid Bohemian peasant with that of a high-strung society lady. Handle both in the same way, and the result would be disastrous to the patient as well as to one's professional reputation. And how frequently in hospital operations are we entirely deceived as to the powers of resistance, even when no visceral lesion is demonstrable !

It is my purpose in this brief paper to invite your attention to an element of danger in private obstetric work on which too little stress is laid by teachers and text-books, and which is only thoroughly appreciated after one has had a practical experience with it at the bedside.

It is hardly necessary, before such an audience as this, to dwell upon the responsibilities and anxieties of the accoucheur. These only increase with increasing knowledge and experience. In spite of the trite statement that labor is a " physiological process," and that the majority of parturient women will do perfectly well if let alone, we who practise in a large city and among the offspring of modern civilization (with all that this expression signifies) know only too well that every case of labor is an uncertain problem, of which no man knoweth the end from the beginning.

How often it happens that the case which we predicted would terminate normally has turned out to be most serious and compli-

cated! The responsibility of the abdominal surgeon is light indeed compared with that of the obstetrician, upon whose skill, coolness, and judgment depend *two* lives instead of one. It has always been incomprehensible to me that the financial compensation of the latter should be so ridiculously inadequate in comparison with the surgeon's. It is possible that the laity may be so educated as to realize this fact, but hardly in our generation, where the accoucheur is too often regarded as only a degree above the midwife. We shall be able to study this subject more intelligently by considering briefly the patient, the conditions under which we are obliged to work in private practice, and the operation.

The oft-quoted saying of Dr. Holmes, that the treatment of a patient should begin with his grandfather, does not apply, as a rule, to the women of the present generation. The mothers and grandmothers were all right. They had large families, and remained hale and hearty, quite ignorant of modern gynæcology. It is always a mystery to them why a single labor should render their daughters chronic invalids. It is no mystery to us who have watched their exotic growth from girlhood to womanhood. Their nerves, their flabby muscles, their anteflexed and undeveloped uteri, prolapsed ovaries, and other abnormalities are sufficiently familiar. How can we expect that maternity will be a natural condition in such women? Then, too, many avoid conception until it is convenient, abort a few times, and when they do go on to full term suffer all the reflex disturbances described in the books, look forward to parturition with the greatest apprehension, and are ill-prepared for the ordeal when it comes.

The type of patient whose accouchement her attendant anticipates with the greatest apprehension is the old primipara—stout, neurotic, and intolerant of the slightest pain. This is common among Hebrew women, especially those who are luxurious, heavy feeders, disinclined to exercise, and who cannot be induced to take sufficient during the latter months of pregnancy to keep down their superfluous flesh and develop their flabby muscles. The urinary secretion is often deficient, with an excess of uric acid. The heart action is not as strong as would be expected in women of their physique, and the pulse is soft and compressible.

It is almost to be expected that under the strain of a prolonged labor such women will, as the expression is, "go all to pieces," and will be in a most unfavorable condition to stand the added

strain of artificial delivery. Such women bear small children only with the greatest difficulty ; and when (as is so often the case with the first) the fœtus is above the average size, the dystocia is marked even with a pelvis of entirely normal dimensions. We are too apt, by the way, to assume in these cases that the obstruction is due to antero-posterior contraction, which in my experience is rare in the upper classes.

Assuming that we have to do with a patient of this type, let us consider some of the unfavorable conditions which add to the difficulties of parturition. It is a curious fact that in these patients the membranes often rupture before the onset of labor. This has occurred so frequently in my practice that I have been almost inclined to regard the phenomenon as another indication of variation from the normal, which has become more marked in the present generation. Add to this rigidity of the cervix and an occipito-posterior position (which is also relatively more common in private than in hospital practice), and we have all the elements favorable to a protracted and exhausting first stage.

It is usually after the patient has been in active labor for from twelve to thirty-six hours without making any progress that the obstetric surgeon is summoned. There is no use in his wishing that he had been summoned earlier. He must take things as he finds them. The patient and her family are in a high state of nervous excitement, and all, including the nurse and physician, are tired out. An examination shows that the waters have drained away, the uterus is in a state of tetanic contraction, or else the pains are feeble and intermittent, the mother's pulse is accelerated, and the fœtal heart (if it can be heard at all) is rapid and irregular.

It is evident, even before making an examination, that there should be no delay in terminating the labor. The environment is not encouraging. With poor light, insufficient aid, and the usual absence of appliances necessary in an aseptic operation, the outlook is unfavorable. Moreover, there is always the possibility that the patient has already been infected during the repeated examinations or the manipulations of the nurse. It makes no difference what may be the circumstances, having once been summoned to the case, all the responsibility is thrown upon the consultant, especially if things go badly.

Before touching the patient, he owes it to himself, as well as to

the family, to give a doubtful prognosis with regard to the child, and not to make light of the maternal danger.

It is superfluous to dwell upon the difficulties encountered during a private obstetric operation—the fact that the operator must do everything himself, and that under the circumstances the rigid asepsis observed in hospitals is well-nigh impossible ; that his attention is constantly distracted by the necessity of keeping one eye on the anæsthetizer and making frequent inquiries as to the condition of the pulse.

In every case of artificial delivery in private practice the accoucheur is between two horns of a dilemma ; he is tempted to hasten the operation in the interests of the child, while prudence urges upon him the necessity of deliberate, interrupted efforts in order to avoid injury to the maternal soft parts, and to lessen the danger of shock and post-partum hæmorrhage. It should be noted that rapid work in obstetric—the reverse of general surgery—often increases the liability to shock. Moreover, prolonged chloroform anæsthesia is to be dreaded, especially in the case of stout patients with weak, overworked hearts and unsound kidneys. To my mind, a difficult high forceps under these conditions is one of the most serious operations in surgery. I have seen at least three patients succumb purely from shock, and that, too, in the hands of experts who exercised the greatest care. I exclude from this category cases of rupture of the uterus from rough manipulation, of which there have been many (unreported) cases. Nor is this experience confined to private practice. In maternities I have repeatedly seen cases of profound shock following difficult version and extraction, high forceps, symphyseotomy, etc., though none terminated fatally, probably because of the greater resisting powers of hospital patients.

The following are brief notes of cases seen in consultation, the last four during the past month :

Case I.—Old primipara ; no history of cardiac trouble ; tedious labor, with protracted first stage. When examined under chloroform the head was found to be firmly engaged, occipito-posterior ; os half dilated. Delivered with forceps of a live child. No hæmorrhage. Considerable shock, from which the patient rallied well, but died suddenly three or four hours later.

Case II.—Old primipara ; in labor forty-eight hours when I saw her ; pulse 120 ; temperature 101°. Pains had ceased, uterus in a state of tetanic contraction, with os rigid and half dilated and

head engaged. Delivered with forceps of a large dead child. No hæmorrhage. Patient quite weak, and half an hour later suddenly collapsed and became pulseless. Was revived with great difficulty with strychnine, nitro-glycerin, oxygen, and hot saline enemata. Collapsed several times during the next twenty-four hours, and pulse remained 120 to 150 for several days.

Case III.—Patient a young primipara, stout, flabby, and highly neurotic. Premature separation of the placenta before completion of the first stage. Rupture of the membranes and rapid delivery of a dead child with forceps. Amount of blood lost not excessive, and uterus contracted well. While I was suturing the perinæum the patient (whose pulse had grown weak) collapsed and died in an hour.

Case IV.—Patient a stout multipara. Had been subjected to repeated attempts at delivery with forceps before I saw her, and was much exhausted. Uterus contracted firmly over a large child, vertex presentation. Slight antero-posterior narrowing. Child dead. Craniotomy performed with great difficulty, but necessary to eviscerate and amputate the arms in order to deliver. Careful manipulation for upward of an hour. No hæmorrhage. Collapse and death a few hours later.

Case V.—Patient an old primipara weighing nearly three hundred pounds. Had been in labor several days, the membranes having ruptured at the outset. Prolonged attempts had been made to deliver with forceps. Child unusually large; occipito-posterior; fœtal heart strong. Impossible to rectify malposition or to bring down a foot without rupturing the uterus. Vulva so small that it was exceedingly difficult to introduce the hand. Expressed the opinion that perforation was the only course advisable. This was strongly objected to by the family, who were Catholics. Continued attempts at delivery at intervals for two hours until I could testify that the child was dead, then I was allowed to perform craniotomy. Worked four hours in all, the patient having taken eight ounces of chloroform. Adherent placenta; uterus flabby and tamponed. Her pulse was very rapid and weak at the end, but she rallied and eventually made a good recovery.

Case VI.—Primipara nearly as stout as in preceding case, with conditions practically the same, except that no attempt had been made to deliver. Dry labor; thirty-six hours. Pains had entirely ceased. Head not engaged, but impossible to perform version. Pulse 120, but good volume. Could not hear fœtal

heart ; escape of meconium. Gave bad prognosis as to child, but craniotomy was not entertained, as there was a strong desire to save it if possible. Exceedingly difficult forceps delivery. Child very large, and shoulders extracted only after prolonged traction for half an hour. Adherent placenta. No hæmorrhage. Time of operation two hours. Patient had a rapid, feeble pulse throughout the night, but rallied well the next day. During the following night pulse 130 to 150 without temperature. Died on the third day, her physician believed of shock, though there were evidences of sepsis.

In all these cases a careful examination of the uterus was made after delivery in order to exclude rupture. I believe that in many cases in which death is attributed to shock it is really due to this lesion, as in the following case :

While making my usual visit at Maternity Hospital, I found a patient in the ward who had been delivered the night before. Her labor was spontaneous, and she was in good condition when transferred from the delivery room. Six or eight hours later she suddenly collapsed, but I was not sent for. I suspected rupture of the uterus, which was confirmed by abdominal section, performed as soon as possible after I saw her. She succumbed.

That puerperal women of a certain type are exceedingly prone to shock is illustrated by the following case, seen within the past week : The patient, a stout, flabby multipara, aborted at the third month with profuse bleeding, and I was called late at night to remove the decomposing decidua. Temperature 103° ; pulse 120 but of fair volume. Chloroform anæsthesia, for which ether was substituted, on account of the feeble heart action. Uterus large and would not contract. Tamponed with gauze. Pulse suddenly failed and could barely be felt at the wrist ; heart action feeble, and I thought that the patient would die on the table. She revived under vigorous stimulation and eventually made a rapid convalescence. The operation was short, and but little ether was used. She would undoubtedly have succumbed had the anæsthesia been prolonged for even a few minutes.

In selecting these cases, I have purposely omitted those in which the presence of cardiac or renal disease renders the prognosis uncertain from the outset. As an example of the latter sort, I cite the following :

I was called to see an old primipara weighing about two hundred and fifty pounds, who had been in labor forty-eight hours.

She had been allowed to go on to full term with mitral stenosis and insufficiency, and was up and about when I saw her. Child unusually large (twelve pounds) and dead. Vertex presentation, occipito-posterior. General œdema of soft parts. Advised immediate resort to craniotomy and gave bad prognosis. Operation under chloroform and oxygen anæsthesia lasting over an hour. Patient bore the operation well, and was apparently doing first rate, but suddenly developed pulmonary œdema, became cyanosed, and died eight hours after delivery.

In contrast with this appalling array of fatal cases I might refer to numerous others in which, under conditions more unfavorable than those mentioned, children were saved and mothers made a good recovery without any injurious after-effects. But these would not emphasize the point which I wish to make—that prolonged obstetric operations performed upon a certain class of women in the better walks of life are fraught with considerable danger, and are not to be lightly attempted without a full realization of the risks involved and a frank statement of these risks to the family. In private practice we are so anxious to save the child (especially if it is the first one, and important interests are involved in its preservation) that we are rather too apt to overlook the fact that the mother's life may also be in jeopardy. For this reason we may fail to resort at the outset to embryotomy when it is clearly indicated.

I have not discussed the question of symphyseotomy or Cæsarean section for the reason that these operations, which we recommend so freely in society discussions, are usually out of the question in private practice, especially under the limitations which are imposed upon the consultant.

The familiar remark of the cynical French writer that "there is always something agreeable to us in the misfortunes of our friends" has often been verified in our individual experiences. Who of us has reached such a height of magnanimity that he can hear without a certain self-complacency of some unfortunate case in the practice of a *confrère?* But our pride is short-lived. Sooner or later a similar fate will be ours. The uncertainties of medicine, and especially of obstetrics, are so great that no man knows when he will be called upon to face the most formidable complication. This thought should make us not only ever alert and on our guard, but above all exceedingly humble and charitable in our judgment.

27 East Sixty-fourth Street.

NAUSEA AND VOMITING OF PREGNANCY, WITH REPORT OF CASES.*

By Edward P. Davis, A.M., M.D.,

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Few subjects in the pathology of pregnancy have occasioned more discussion or have resisted solution so successfully as that expressed in the title of this paper. Some have sought to describe by the word "pernicious" the fatal tendency of this complication, while others express the opinion that serious nausea and vomiting are of rare occurrence, and that active interference is almost never indicated. These cases are of general interest because they are often first seen by the general practitioner, and as their gravity must be early appreciated to save life, the fate of the patient will often depend upon the diagnostic skill and good judgment of the physician who sees her first. Within a few years it has been my lot to see in consultation six of these cases, five of which were fatal. Three of these have been reported to the American Gynæcological Society, May 29, 1894, and published in the *Medical News* of June 2, 1894. Three are reported to this society for the first time. I will briefly summarize the cases already reported, add the remainder, and from them deduce statements of general bearing whose discussion will, I trust, bring out the opinions and experience of those interested in the subject.

Case I., a widow, had been treated for several months for chronic gastritis. A medical consultant confirmed the diagnosis and continued the treatment. The physician in charge finally requested an examination of the pelvic organs, which was made by me in consultation. A retroverted pregnant uterus was found. The patient was in the last stages of exhaustion, and although removed to a hospital, and the position of the uterus rectified, she died. The replacement of the uterus caused the vomiting to cease, but too late. A post-mortem examination could not be obtained. The true nature of the case was not communicated to her relatives, as the pregnancy was illegitimate.

Case II. had been treated for dysmenorrhœa, anteflexion and prolapse of the uterus. She passed from observation, but returned

* Read before the Philadelphia Obstetrical Society, March 4, 1897.

some time afterward in a pregnant condition. Although her husband appreciated the danger of persistent vomiting, she would not consent to the treatment proposed, and went to another physician. Some time afterward, at the end of the fourteenth week of pregnancy, I was recalled to the case in consultation. Dr. Anna Broomall also saw the case with me. The uterus was sharply anteflexed, was forced downward in the pelvis, and marked pelvic tenesmus was present. The patient's condition was that of extreme prostration, with coffee-ground vomit and sub-sternal pain. The cervix was dilated under chloroform with great difficulty. The patient's vomiting ceased, but shortly afterward abortion was ushered in by a chill, and although the abortion was promptly terminated, the patient sank and died. A post-mortem examination revealed a profound disorganization of the blood, and locally a very thick and resisting cervix containing dense masses of connective tissue, and also two cysts, one an inch and a half in diameter, the other half its size. These contained thick, transparent, yellow substance, which microscopic examination showed to be the contents of retention-cysts from cervical follicles.

Case III., like the preceding, was a primigravida seen in consultation with Dr. Loux, who had recognized the gravity of her condition. The uterus was anteflexed and low in the pelvis. Her pulse varied from 100 to 120, she suffered constantly from nausea, and at night her symptoms increased in severity. We urged that the cervix be dilated at once, and, if necessary, that the pregnancy be ended. The friends of the patient persuaded the husband that this was bad advice, and the wife was taken to a sanitarium, where she died in a short time from exhaustion.

Case IV. was that of a young woman, the wife of a physician, who had suffered an abortion for which the uterus had been curetted at the time. She afterward became again pregnant, and was seen by me, at the request of her husband, being then about eight weeks in gestation. She was without a trained nurse, and although her pulse and general condition were fairly good, she was not obtaining nourishment at regular intervals, and was not gaining in strength. Her nausea was almost constant, although she vomited comparatively seldom. In view of the dangers of her case, I stated that unless the patient could be put under the constant care of a nurse, or be taken to a hospital, that I could not conscientiously assume the responsibility of her case. As neither of these precautions was taken, I left the case, and was informed afterward by the husband that his wife died of exhaustion a few weeks later. In this case, the absence of pelvic tenesmus and the fact that the patient seemed sus-

ceptible of control by skillful care led me to hope for a favorable issue if proper precautions were taken.

Case V. was sent to the Jefferson Maternity on December 17, 1896, by Dr. M. H. Williams. She had been seen in consultation by Dr. J. M. Fisher and by Dr. West, and her condition considered grave. She was in the seventh month of her second pregnancy, and was extremely emaciated and very weak. The illness of Dr. Williams had made it impossible for him to attend her longer, she having been under his care previously. On examination, the fœtus was found to be living, its movements active and apparently exciting distress in the mother. The cervix was thick and resisting, although the finger could be carried through the external os to the internal os. The patient's mental condition was without delirium, she was apathetic, did not complain of especial pain, but of a constant sensation of nausea, with inability to sleep. Her temperature on admission was 96, her pulse 100, very lacking in arterial tension. She had been pregnant once before, her pregnancy ending in a premature labor at about the seventh month. The examination of her urine showed a reddish-brown color, specific gravity 1012, reaction acid, a considerable amount of serum-albumin, no sugar, and 1 77-100 per cent. of urea. An examination of the blood showed 4,240,000 red cells, 12,000 white, and hæmoglobin, 65 per cent. The red cells were small but normal in contour, the white cells polynuclear. An examination of the matter vomited showed three ounces ejected at one time, containing a very large amount of free hydrochloric acid, with a trace of lactic acid. A trace of bile and hæmatin was present. A small number of granular leucocytes was found, and desquamated epithelium from the digestive tract was present in abundance. Her husband stated that in her former pregnancy she became in a similar condition, but recovered after premature labor. She was weak, however, and could not retain meats, but lived mostly upon cereal food. Her nausea and vomiting became worse at the fourth month of the present pregnancy. She had been in bed three weeks under treatment.

Under the use of rectal feeding and stimulation, with external warmth, the patient's temperature rose to 100, and her pulse increased to 118. She retained milk and lime-water, and her sensation of nausea was for twenty-four hours less apparent. It soon returned, however.

So soon as the patient was seen, an unfavorable prognosis was given. Her condition upon admission was so grave that it was not thought advisable to anæsthetize her and thoroughly dilate the cervix. It was hoped that by rectal feeding and stimulation, with lav-

age of the stomach, that sufficient food and stimulants could be given to enable her to gain strength and afford her a better chance for recovery after operative interference. She was kept absolutely quiet, and nourished by rectal injections containing brandy and suitable foods, while the stomach was washed out daily, very much to the patient's comfort. It was found, however, that the intestine contained hardened feces, and that the mucous membrane of the bowel was in such a condition that absorption must be very imperfect. Accordingly, the intestinal tract was freely douched with normal saline solution, which brought away dried and hardened feces of a very foul odor. The stomach-washing resulted in the ejection of bile-stained fluid, with mucus, slightly stained with hæmatin. Under this treatment, her condition temporarily improved. Her pulse fell as low as 70, her temperature remained at 98 and 98½, she slept for several hours at night under hypodermic injections of codeia, and seemed to be gaining slightly in strength. This continued for eleven days, no great change taking place, but the patient certainly losing nothing, and apparently gaining. On December 28 severe uterine contractions began, which gave the patient great pain, and which were preceded by a chill and a rise of temperature to 103. The child was living, and its movements active. The patient was at once anæsthetized, and the cervix dilated. Great difficulty was experienced in thoroughly opening the internal os. The bladed dilator was first employed, followed by solid metal dilators until the finger could be thoroughly passed about within the internal os. The membranes were unruptured, the head of the fœtus presenting, but freely movable. Following this, a Barnes' elastic bag was inserted within the cervix, and the vagina tamponed with gauze to retain the bag. The patient's pains subsided after the dilatation, the bag was removed in four hours, and the cervix lightly tamponed with antiseptic gauze. The patient was quiet during the day, and the gauze was removed in the afternoon. In the early evening, her pains again became severe, when McLean's bag was inserted, and gradual dilatation of the cervix accomplished. This was not attended by noticeable increase in the patient's suffering. When the dilator had been distended as greatly as possible, the patient was anæsthetized, the dilator removed, when it was found that the cervix was still remarkably resisting. To complicate the delivery, bleeding began, evidently from a partial separation of the placenta. The patient's exhausted condition made immediate delivery necessary, and the cervix was rapidly stretched by the hands, version performed, and a child weighing three pounds delivered. The fœtus survived birth a short time. Stitches were taken in the cervix

to prevent the possibility of hemorrhage from the cervical arteries, the uterus was tamponed with gauze, and the vagina also. Saline transfusion was immediately practiced, and stimulants administered. The patient reacted from delivery remarkably well, her pulse being but little above 100, and her temperature 99. She experienced, however, a return of the uterine pains from which she had suffered, and the tetanic condition of the uterus was so marked that the removal of the gauze was accomplished with difficulty, and gave no relief. Her symptoms continued; although conscious, she complained frequently of the spasmodic contractions of the uterus. She could not assimilate nourishment, and died five days after delivery. At the time of death her temperature rose to 105. A post-mortem examination could not be obtained. Soon after her delivery an examination of her urine found a specific gravity of 1010, a considerable quantity of serum-albumin, no sugar, 1 51-100 per cent. of urea, and no bile-pigment. The sediment was composed of an abundance of granular leucocytes, epithelium in a condition of granular degeneration, epithelial and granular casts, and crystals of urinary salts. An examination of the placenta gave nothing of pathological significance. The child was plump, its placenta weighing ten ounces; its cord twenty inches in length.

A remarkable feature of this case was the very general and profound degeneration of the epithelium of the intestine, stomach and kidneys. The matter discharged from the bowels was extremely foul, and the patient had about her persistently a mawkish odor which necessitated repeated fumigation of the room, and finally the removal of the paper upon the walls and the application of calcimine. Although the patient's symptoms had been seen in other cases, still the pelvic and uterine tenesmus was uninfluenced by any drug or method of treatment available. Owing, I believe, to the extensive injury of the epithelium of the body, assimilation was impossible, and even the inhalation of oxygen was without result. The patient's improvement was very slight before labor occurred, although she certainly seemed to gain in strength.

Case VI. Mrs. A. B., was referred to me by Dr. Louis Starr. She is aged thirty-four years, married ten years, and has a daughter aged nine years. For the first three months of her first pregnancy she had what is described as "inflammation of the bowels" with almost constant diarrhœa and inability to walk. She grew better until the seventh and eighth months of her pregnancy, when she was exceedingly nervous. Her child was born with the aid of forceps, and a laceration occurred which was repaired a year later. She has suffered from backache and nervous prostration at intervals

since. Her last menstruation was October 20, 1896, and following the cessation of her monthly sickness she had headache, backache and nausea. She endeavored to cleanse her tongue by taking calomel, which caused purging and vomiting. She was first seen on January 6, when her pulse was 78; her temperature 98. A vaginal examination showed pregnancy at two and a half months, the uterus markedly anteflexed, but in good position, the fundus at the top of the pubes, and pelvic tenesmus absent. The patient referred no distress to the pelvis, but complained of a constant irritating and gnawing sensation within the abdomen. She was without intelligent care, and burdened with household anxieties. Examination of her urine showed specific gravity 1020, reaction acid, sugar and albumin absent, urea 1 77-100 per cent. and phosphates in abundance. The prominent feature about the case was the nervous condition of the patient. She could not take various simple articles of food, notably milk. She had first thought that she could not have a nurse, and her general apprehension and disquietude were most distressing. She was put, however, in charge of a competent nurse, with directions to study her capacity for taking food carefully, and to feed her as best she could. It was found that she could not tolerate milk, however, prepared; that liquids of any sort increased her distress, but that she craved solid food. The bowels were constipated, the skin deficient in action, and although the patient was apparently quiet, still her mental condition was one of great anxiety. A record was accurately kept of all nourishment taken, of the hours of sleep obtained, and of the patient's general condition. She was fed at meal times with solid food and peptonoids, and occasionally broths were given between the meals. She had a daily inunction of olive oil and alcohol, preceded by a soap and water sponge. The effort to move the bowels by injections greatly increased her distress, while the patient asserted positively that she could not take the usual laxatives. She was given, without her knowledge, several one-grain doses of calomel with sodium bicarbonate in capsules. This was taken at night, followed by an injection of saline in the morning, and greatly improved the character of the excretions. Her bowel movements and urine prior to this had a most peculiarly foul odor. Intense headache occurred at various times, and nerve-storms seemed to result from changes in temperature and barometric pressure. Under the skillful care of a good nurse, her distress speedily lessened, she gained slightly in flesh, was able to sit up and to go to an adjoining room. A blood-count showed 4,600,000 red-blood corpuscles, 10,000 white, and 73 per cent. of hæmoglobin, a deficiency of 3 78-100 grains to each hundred grains of blood. The

amount of solids in the urine increased considerably, and the patient's bowel-movements at times became normal. No sedatives whatever were given to her, but the treatment consisted in careful attention to her nutrition, and in a continuous effort to gently stimulate the excretory processes. At present, her general condition is much better than when first seen. Her hysterical tendencies, however, are exceedingly pronounced, and it seems at times impossible to control the patient without causing her great irritation. She and her husband greatly desire that the pregnancy be prolonged, if possible. In reviewing the pathology of these cases and the literature of the subject, one must be impressed with the frequency with which displacements or alterations in the structure of the uterus are present. In importance, displacements of the uterus backward are far less dangerous and difficult of treatment. It is rare to find a retroverted pregnant uterus which cannot be replaced with immediate benefit to the patient; on the contrary, in the six cases described, in five the uterus was anteflexed in a very marked degree. An extraordinary thickness and toughness of the cervix were also present in these cases. The spasmodic condition of the uterus and the muscles of the pelvic region are best described by the term, "pelvic tenesmus," which is most distressing in many of these cases. The continuous irritation of the nervous system, originating in the pelvic organs, seems to act as a powerful depressant upon the secretory nerves of the digestive tract. While an abundance of gastric juice is formed, the pancreatic, biliary and intestinal secretions are notably deficient. This condition is further increased in some cases by the prolonged use of opium by suppositories. In several of the cases described, this treatment had been carried out before the patient was seen, with the effect of rendering her partly stupid and distinctly decreasing her power of assimilation. The respiratory, cardiac and heat centres of the nervous system are the last to yield in these cases. The physician may be misled by the apparently favorable pulse, temperature and respiration. It is difficult to understand the occurrence of a chill when abortion happens, as has been observed in several patients. The mental condition in these cases is particularly apathetic, often with insomnia, and in some cases with marked hysterical tendencies. Pain is a frequent symptom, and may be referred to the pelvis, to the uterus, to the epigastrium, or to the sternum. Such pain is almost constant, and is described as gnawing or burning. A symptom of the greatest value is found in the discharge of hæmatin in the vomited feces or urine. This indicates a marked disorganization of the blood, and is a most unfavorable sign. Emaciation is present in some cases, and may

not be noticeable in others. In the latter fatty degeneration and abnormal deposits of fat beneath the skin may deceive the observer. The extraordinary odor which many of these patients manifest must be referred to altered secretions and decomposed food within the intestine.

In treating these cases, it is of the utmost importance that the patient be taken thoroughly in hand at the very start. Where nausea and vomiting are but slight, all pressure should be removed from the abdomen, the clothing properly regulated, constipation avoided, and the patient fed judiciously and at proper intervals. The free use of Apollinaris, vichy or plain soda water often greatly relieves the heart-burn from which some of these women suffer. When the patient's food lessens in quantity, she must be put to bed and under skilled care. All the resources of good nursing are taxed in feeding these patients. It is not well to consult abnormal cravings, as shown by one of the women whose case is reported, who desired nothing so much as a large quantity of sauerkraut. The nurse should be given a diet-list of nutritious foods, and should study daily the best method of preparation to meet the patient's tastes. A toxæmic condition often accompanies this complication. and this must be met by increasing the action of the kidneys, the bowels, the liver and the skin. It is often impossible to choose any purgative which does not increase the patient's distress, and rectal injections are often badly borne. Thorough lavage of the bowel with normal saline solution will often give less distress than a laxative enema. The question of stomach-washing must depend upon the character of the vomit and the peculiarities of the patient. If mucus be vomited, the stomach-douche should be given daily until it does not appear in the vomit. Where mucus is not ejected the stomach may be washed once or twice to advantage, but irritation may result, if the douche be frequently repeated. Mild and prolonged counter-irritation over the epigastrium is especially useful. The skin must be caused to act by hot sponging with soap and water, or with alcohol and hot water, and benefit will be found by following this with inunctions of olive oil, two parts, and alcohol one. The kidneys are best caused to act by calomel and the judicious use of water, while the liver will respond to the same remedies. Sedative drugs should be employed as little as possible, as their continued use lessens appetite and diminishes the power of absorption and assimilation. In hysterical patients a hypodermic injection of sterile water given with a blunt needle at evening will often prove of value. Codeia, by hypodermatic injection, is least injurious of the preparations of opium.

The local treatment of these cases is most important. The uterus must be put in proper position and so maintained. If congestion be present in the pelvic tissues, the uterus should be replaced under anæsthesia, and retained by a packing of sterile lint soaked in glycerin. To this, tincture of belladonna is often added to advantage. In cases of anteflexion, the uterus should be carried sufficiently high above the pelvic brim to relieve all pressure against the tubes. In some of these cases, when the bladder is empty, the uterus is forced against the anterior pelvic wall to the great distress of the patient. Dilatation of the cervix is indicated where replacement of the uterus does not relieve. Under chloroform anæsthesia, the finger should first be tried, and if it be passed through the internal os and the membranes be found adherent at the os, it is well to separate them. If the finger does not succeed, then the bladed dilator or the solid uterine bougie must be used.

The question of the interruption of pregnancy is of great importance in these cases. Those which we have reported we have selected to emphasize the fact that danger is not apprehended with many of these patients until interference is too late to save life. Unless immediate improvement follows the treatment already outlined, there can be no question of the necessity for interference. Where cases are observed in which the digestive organs are profoundly affected, in which the blood is losing its hæmatin, in which the patient is sleeping badly, and in which the uterus has been replaced and the cervix dilated, there can be no question of the necessity for a radical procedure. The pulse and temperature unfortunately do not give alarm sufficiently early with these patients. It is far better to terminate the pregnancy too soon than to lose the opportunity for checking the disorder. When interference is practised, it should be thorough and complete. Instrumental dilatation, followed by the removal of the ovum and appendages by the finger or curette, with douching and tamponing of the uterus comprise the best method of procedure.

In this paper I have purposely avoided the discussion of rare cases where some lesion of viscera other than the pelvic and digestive organs has been found by autopsy. I have also not included other rare cases where a pathological condition in the fœtus or its appendages has been present. No mention has been made of the simple vomiting of pregnancy, as these cases readily yield to treatment and seldom prove serious. Cases in which obstinate vomiting ceases suddenly are most reasonably explained by spontaneous reposition of a misplaced womb.

In conclusion, the following points have been emphasized by

my experience in this subject: First, the absolute necessity of skilled and thorough care when the nutrition of the pregnant woman suffers from nausea or vomiting; second, the duty of the physician to at once make a thorough local examination, and to place the uterus in as favorable a position as possible; this failing, he should promptly dilate the cervix; third, when these two methods of treatment are not followed by speedy relief and improvement in assimilation, the pregnancy must be terminated.

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EDITORIAL.

THE ABUSE OF MEDICAL CHARITY IN HOSPITALS AND CLINICS.

It is with pleasure that we chronicle an attempt—we trust it may not be this and nothing more—by a competent authority to sift this public scandal and to lay the odium of it where it justly belongs. If this attempt is made in earnest and with the determination to stop the abuse, it needs not prophecy to foretell that the remedy is at hand. The Medical Society of the County of New York has requested the co-operation of all hospitals and clinics within its jurisdiction to put a stop to this abuse, where it is found to exist, and to communicate statistics on this subject to the Society.

This is the first, the preparatory step. So far, so good. Now, if the Society is really in earnest, it fully recognizes the fact that it will obtain no assistance from any one hospital or clinic; the response from each—and medical charity is about equally abused in each—will be an evasive one, generally acknowledging the existence perhaps of a little abuse of this character, of a sporadic nature, but protesting against exaggeration and asserting an inability to check absolutely the sporadic cases, so cheerfully acknowledged, where this abuse occurs. And this response, which

the Society should expect, will come from the governors or lay authorities of the hospitals and clinics, but it will have been dictated in probably every case—as the Society should also know—by the medical boards or other medical authorities of these institutions, who are themselves members of the investigating Medical Society of the County of New York!

To the uninitiated this must seem a strange condition of affairs, but the explanation is indeed very simple and very logical. It all hinges upon the law of supply and demand and upon the axiom "self-preservation is the first law of Nature," which so often stands for the supreme law of selfishness.

First, there are not enough patients (of the right sort, *i. e.*, those deserving of medical charity) to fill our hospitals and clinics—if they exist, at least they do not apply—and here we have the supply exceeding the demand. Secondly, given the first proposition, the application of the second, "the first law of Nature," is patent. No institution feels it can afford to send away the wrong sort, *i. e.*, the "medical free-lunch" patients, of whom there is no lack, because it knows that these will be gladly welcomed into the first other institution at which they apply.

Let us realize two other dependent facts: No lay Board of Governors, as a board, of any institution in this county has the slightest interest in the question of medical charity. Medical interests, as such, are quite outside their line of vision and their sympathies. They have but one object in view, namely, to make their institution self-supporting or to keep its expenses within its sources of revenue; in other words, to make it a successful business venture. But one thing is expected of the attending physicians and that is virtually a demand. They must keep their wards full! If it is seen that any luckless physician cannot or does not do this, and the revenues shrink, he realizes that his place is in jeopardy, for there are many candidates, full of promises, "clamoring at the gates."

Here, then, is the whole question in a nut-shell. We can expect nothing from the lay Governing Boards. We cannot expect an initiative from the Medical Board of any one or any two institutions. They cannot afford it. So long as members of our profession are willing and ready to underbid and undersell each other, Justice and Equity must stand aside with folded arms.

And now we have come to the only solution of the difficulty, the only means by which the scandalous abuse of medical charity may be stopped.

In an editorial last month, we asserted that only in the discipline of public opinion could a remedy be found. If our County Medi-

cal Society is in earnest, it will bring pressure to bear upon the medical authorities of every institution equally to work in concert and in harmony to this end—the refusal to treat or to accept as free patients all who can be proved to be able to pay for such medical assistance. Hospitals and clinics cannot exist without doctors, no matter what the disposition of lay Governors may be, and therefore the solution of the whole difficulty lies in the hands of the Medical Boards themselves if they will but unite sincerely and honestly to further this end. Human nature is the same everywhere and all men naturally tend to justice; the only stumbling block to this tendency is self-interest. If, therefore, medical attendants at hospitals and clinics could feel assured that other institutions would not accept improper patients whom they had refused, and that other medical men would not accept the positions, with the loss of which they would probably be threatened on account of their action, they would undoubtedly unite as one man to put down this abuse. For, under such circumstances and with such a cause, all opposition would vanish.

We know of but one body which has the power to bring about this consensus of opinion and concerted action among the medical attendants of hospitals and clinics in this county. The Medical Society of the County of New York, by the disciplinary force of the public opinion which it possesses, can, if it will, bring about this result.

But, although this Society has the power to discipline its members and thus to control abuses in institutions under its jurisdiction, there is a greater and a wider power, if not so immediate. A medical society can control its minorities, but a medical press can convert them. We, therefore, again urge our esteemed contemporaries throughout the country to take up this subject unitedly and to condemn an outrage, which has made charity a harlot and a laughing-stock and in all our large cities is demoralizing the rank and file of our profession. A portion of the medical press, we are glad to state, has already begun this worthy crusade. We hope soon to hear universal and repeated editorial condemnation.

It must indeed be a serious matter, which has made the majority of our professional brethren cry out in desperation against the injustice of their fellows.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, January 5, 1897.

The President, ROBERT A. MURRAY, M.D., in the Chair.

Disappearance of Fibroid After Ligation of the Uterine Arteries

Dr. A. H. GOELET presented the patient spoken of by him at the last meeting of the Society, in whom a fibroid disappeared after ligation of the uterine arteries. Last June, he said, the fibroid reached the umbilicus. The uterus measured five inches. At that time he ligated the uterine arteries. It measured three and a half inches. In the latter part of September the uterus measured three and a half inches, and has continued to reduce in size, so that now he cannot detect any fibroid enlargement. Before the operation she was in the habit of menstruating from ten to thirteen days very profusely. Since then, although menstruating regularly, she menstruates only three or four days. In his opinion, it is necessary to sever the artery instead of simply ligating, because in several cases the circulation has been restored, and he explained it on the supposition that some of the tissue at the base of the broad ligament being included with the artery, it was only temporarily compressed, and that when the ligature loosened the circulation was restored. He now severs the artery by ligating in two places, and cutting between the ligatures.

The President appointed Drs. Malcolm McLean and Joseph Brettauer a committee to examine the patient, and they reported as follows:

Dr. MALCOLM MCLEAN found the uterus very little, if any, enlarged, and very easily anteverted.

Dr. JOSEPH BRETTAUER made the same report. The uterus does not seem enlarged, but what struck him was the condition of the cervix, which with a uterus of this kind one would expect to find hard, but which in this case is very soft. The os is wide open, and, while he did not put his finger in it, he has the impression that in the cervix is something which does not belong there.

Dr. GOELET stated that he had examined the case carefully, and

had noted the condition of the cervix referred to, and believes it to be merely hypertrophy of the mucous membrane.

Dr. Brettauer said that he referred to a patulous condition of the os. He had the impression there was something else within the cervix, higher up, as if the uterus contracted and wanted to expel something.

Dr. Goelet said he had examined it carefully, and there was nothing there.

Discussion.

Dr. H. N. Vineberg said that he was interested in this condition, and what strikes him is that the cervix has not undergone sloughing and atrophy. In three of the cases in which he has cut the uterine arteries there has been sloughing and atrophy of the cervix, in spite of which, however, the growth kept on increasing, the hemorrhage continued, and he had in one case to do an hysterectomy. Another one has not been operated on yet, and in the third case there was diabetes, in which, of course, the sloughing might in part be due to the condition of the blood. In all those cases there was considerable sloughing and atrophy of the cervix, which it seems to him is what might be expected when the blood supply is tied off thoroughly.

Dr. Malcolm McLean said that it would seem to indicate that a very extensive separation of the other blood supply of the cervix had taken place, in addition to the uterine arteries. It seemed very remarkable, and he would not have thought it possible.

Dr. Vineberg said that the following was the technique of the operation, and he did not know how it well could be done differently. He made an incision in front of the cervix and behind, pushed up the mucous membrane in front of the cervix and behind, then caught the uterine vessel between his two fingers and passed a ligature about it. The other method recently described in this Society, in his opinion based upon the anatomy of the parts, is to be strongly condemned. For it did not seem possible to him to pass two ligatures about the uterine artery and lower segment of the broad ligament in the manner described without running great risk of including the ureter in the centre ligature.

Dr. Goelet said the technique in this case was similar to the first steps of a vaginal hysterectomy. The vaginal wall was separated from the cervix all around, and the broad ligament was clamped and tied and the artery severed. In some cases he reaches the artery by a lateral incision on the side of the cervix, at the cervico-vaginal fold.

Puerperal Infection, Pyosalpinx Dextra, Appendicitis, Universal Adhesions. Total Extirpation of Uterus and Adnexa, Ablation of Appendix. Recovery.

Dr. H. N. VINEBERG: Mrs. D., age thirty-five years, married fourteen years, six children, no miscarriage. Last labor four months ago; ever since suffering with fever off and on; severe pains in both groins and across the hypogastrium; pain extending down both thighs; profuse leucorrhœa. Has been having gynæcological treatment without any relief; on the contrary, pains growing more severe. The patient is of small stature anemic and rather emaciated. On examination the uterus is rather hard to outline, but lies closely connected with a mass the size of a closed fist near the promontory of the sacrum.

On December 12, 1896, under ether, began to dilate the uterus with the object of doing a curettage, so that during the subsequent laparotomy the uterus and one annexum might be conserved. With the first attempt at dilatation using but very gentle force, it was found that the uterine tissues gave way at the internal os. Packed the uterus lightly with iodoform gauze and proceeded with the laparotomy. On opening the abdomen a mass was found in the pelvis, the different parts of which were difficult to differentiate. After a time it was learned that in front of it lay the sigmoid flexure, imbedded in a thick exudate, and behind and firmly attached to the exudate, were the uterus and annexa closely matted together. The bowel, with some exudate attached to it, was carefully separated from the remainder of the mass. This was now brought more closely into view, and it was seen that the appendix, the size of one's finger, was in close union with the mass. The appendix was enucleated and afterwards removed at its insertion. The right appendix, forming a mass the size of a hen's egg, was with difficulty enucleated and removed. The uterus was found to present on its posterior wall, just above the internal os, a ragged opening, through which some of the gauze was protruding, that had been used to pack it. Next the uterus was *in toto* extirpated. But so friable was its tissue that on seizing it with the left hand to cut it out from the vagina, it tore away at its junction with the cervix. I did not care to leave such tissue behind, and consequently afterwards cut the cervix out completely. The peritoneum in front and behind was sutured to the vaginal wall. The vaginal wound was packed with gauze, which was so arranged as to separate the sigmoid flexure covered with exudate from the remainder of the bowel. Excepting a breaking down of the fat layer of the abdominal wound the patient has

made an uninterrupted recovery. She is entirely free of pain, and her pelvis is free of any exudate or thickening.

Carcinoma in One Horn of a Uterus Bicornis.

Dr. Hiram N. Vineberg: The patient from whom this specimen was removed is fifty-five years old and a widow for four years. She had been married thirty-two years, but had lived separately from her husband for the last seventeen years of her married life. She had four children and one premature delivery at eight months, twenty-eight years ago. Her last child was born twenty-five years ago.

About six years ago the menopause became established, but since last December she has been flowing off and on. During the months of April and May she had quite profuse hemorrhages. The flow was irregular and variable during June and July. In August the flow was slight. She was an inmate for eight days in a prominent hospital in this city during September, and as the flow had ceased, she was discharged as cured, and was told that there was not anything the matter with her.

Last July she began to suffer with pain in the iliac region, which extended down the corresponding thigh and upwards to the right shoulder-blade. When seen by me, on November 20, of this year, she was slightly anemic, but not cachetic, though she stated she had lost some flesh.

The vulva was red, and both Bartholin glands were the size of an English walnut, and gave the sense of fluctuation. The vagina was voluminous, the vaginal portion of the cervix completely obliterated. On bimanual examination, the uterus seemed to be enlarged about fifty per cent. over that of the usual uterus during the fruitful period, and was moderately sensitive. A smaller mass was palpated to the left of the uterus, which was thought to be an enlarged and prolapsed ovary. In Sim's position the sound passed in a forward direction and gave a measurement of three inches.

A diagnosis of carcinoma corporis uteri was made. On November 25, the patient entered St. Mark's Hospital. On the day following the Bartholin glands were incised, the right containing grayish-yellow pus, the left dark, heavy blood.

On November 30 I performed laparotomy. After opening the abdomen it was some time before I could make out the true condition of affairs. The right horn was readily brought to the incision, and at first sight it seemed as if that were the whole uterus. Passing from its right side were a normally-placed tube and ovary, and on its left side was a fold of peritoneum resembling the broad ligament.

On searching for the left appendages, the left horn was found lying deep in the pelvis, and attached to it were a normally-placed tube and ovary. The fold of peritoneum, which was first taken to be the left broad ligament, on close inspection proved to be a thick and broad band of tissue passing from the bladder to the sigmoid flexure. This was ligated in two places and cut between the ligatures. The remainder of the operation was carried out in the usual manner for total extirpation, care being taken to keep as far from the uterine tissue as possible. The patient is making a good recovery from the operation.

Specimen.—The two horns lay at an obtuse angle having a short common cervix.

The right horn measures 9.5 cm. in length and 12 cm. in circumference at its largest part. The left horn measures 7 cm. in length and 6 cm. in circumference at its fundus. The common cervix is 3.5 cm. in length.

On laying open the right horn a ragged and irregular growth was found occupying the greater portion of the cavity. It involved chiefly the posterior and left lateral wall. The growth was covered with dark-colored debris.

The pathologist to Mount Sinai Hospital, Dr. F. Mandelbaum, who kindly examined the specimen for me, pronounces the growth to be a rapidly-growing adeno-carcinoma.

Discussion.

Dr. Brettauer said there was one point he was very much interested to hear from Dr. Vineberg's statement, and that was the relations between peritoneum, uterus and bladder. The speaker remembers a case of bi-cornu of the uterus where he removed a sarcoma of the left ovary. The peritoneal covering of the left and more developed horn of the uterus formed a fold which merely touched the fundus of the smaller right horn, and so gave the impression as if this latter were entirely extraperitoneal. He inquired whether Dr. Vineberg noticed anything abnormal.

Dr. Vineberg said he was struck with the fact that he had only one annexum with what appeared to be the whole uterus, and he thought that perhaps the other annexa had become twisted over to the opposite side. On the left side of this supposed whole uterus there was a band of tissue, which impressed him as the broad ligament. It was continuous with the bladder. This band of tissue lay between the two horns, and the left horn was found down deeper in the pelvic cavity, but it was distinctly covered by the peritoneum.

Hæmato-Salpinx of the Right Side.

Dr. A. H. Goelet: Mrs., B., age twenty-three; one child seven years ago, two miscarriages; the first one and a half years ago, the second in August of 1896 at three months. First came under my observation in April, 1896, when she had laceration of the cervix and endometritis. The uterus measured three inches; the other pelvic organs were normal. Operation was advised but refused. She improved under treatment, and went to the country on the first of June. She became pregnant, and during the latter part of August had a miscarriage. She was curetted at the time in the country, but the hemorrhage continued. She returned to the city and was curetted September 16, 1896.

The uterus measured four and a half inches, but a careful examination of the adnexa under anesthesia at that time revealed nothing abdominally. The cervix was repaired at this time. Two months later the uterus was reduced to normal size.

She continued in good health until the middle of December. She consulted me on December 20, giving the following history: For a week she had suffered with pain on urination, frequent desire to micturate and pain over the sacrum and in the right inguinal region. On examination, a mass was found posterior to the uterus, crowding it forward against the bladder. This was hard in some places and soft in others. A diagnosis of possible pelvic hæmatocele was made.

Operation was advised and consented to. Vaginal section was done December 22. Under anesthesia a well-defined tumor about the size of a large orange and filling Douglas' pouch was clearly made out. An exploring needle being introduced showed the contents of the tumor to be clotted blood. An incision was made posterior to the cervix, opening the peritoneal cavity and exposing the tumor, which was found to be adherent to adjacent structures. After these had been separated and the mass freed the sac was opened, and the clots turned out. The sac was then drawn down through the incision, and proved to be a distended tube with thickened walls. There was some difficulty in securing sufficient pedicle to hold a ligature as the tube was distended close to the uterus. The ovary, which was enlarged and cystic, was removed with the tube. The tube and ovary on the other side being normal were left. The stump was returned and iodoform gauze was packed against it, with an end protruding into the vagina, which was filled with iodoform gauze also. A part of this gauze was removed at the end of twenty-four hours and the whole at the end of forty-

eight hours. The patient has made an uneventful recovery, without any elevation of temperature, and is now sitting up just two weeks after the operation. The vaginal wound has entirely healed.

Adeno-carcinoma of the Colon: Resection of Cœcum, Intestinal Anastomosis; Murphy Button.

Dr. Brettauer presented a specimen of adeno-carcinoma of the cœcum. It had been removed from a woman forty-five years of age, who had been under observation at Mount Sinai Hospital some time before operation on July 29. She had had two children, no abortion; menstruated normally until three years ago, when she entered the clinic, and had always enjoyed good health up to three months before admission, except for occasional constipation. This period was characterized by attacks of pain on her right side, which were at times so severe that she was compelled to be in bed for a few days. She would then resume her usual duties. She also noticed that she was losing weight. Physical examination disclosed normal internal organs. By abdominal palpation a mass as large as a fist could be felt in the right iliac region. This tumor was freely movable, slightly sensitive to pressure, and seemed to vary in size at different times. By bimanual palpation a connection of this tumor with the pelvic organs was deemed unlikely. There were occasional attacks of diarrhœa, with bloody stools. A probable diagnosis of malignant growth of the intestine was made, and the abdomen opened by median incision.

The mass was found to be the lower third of the ascending colon, into which were invaginated the cœcum and about two inches of the ileum. The invaginated portions of gut were retained in this position by dense adhesions covering the peritoneal surfaces. This condition at first suggested the presence of a chronic appendicitis, and while deliberating as to the course to be pursued I discovered some enlarged glands in the very much lengthened mesocolon. This led to the conclusion that some of the harder masses to be felt within the gut were not fecal matter but new growths.

Owing to the abnormal length of the mesocolon the mass was easily brought out of the wound, the mesentery resected at its base and about seven inches of intestines removed. The intestinal anastomosis was accomplished by means of a No. 11 Murphy button, reinforced by a circular Lembert catgut suture.

Recovery was uneventful, the button was passed on the eighteenth day after operation, and the patient was discharged three

days later. When seen again, November 18, the patient had gained fifteen pounds and was in good health.

Discussion.

Dr. H. J. Boldt said that he had had two cases of a similar nature quite a number of years ago, and his experience was the same, that they were very movable; and, in fact, so movable that the question arose whether it was not a movable kidney.

Adeno-carcinoma of the Rectum. (Brettauer.)

Selected Cases From One Hundred Consecutive Confinements.

By J. G. Hirons, M.D.

(See page 437.)

Discussion.

Dr. E. E. Tull said that the figures in a large number of cases would vary considerably; for instance, he has seen 150 cases of confinement with one case of twins, and 100 cases of confinement with twelve cases of twins. Forceps and chloroform have been too frequently used, but it is difficult to lay down any rule. The temperament of the woman must be taken into consideration. A woman with a very nervous temperament should not be allowed to suffer twenty-four to forty-eight hours. As to hemorrhage, if the one precaution is taken of having the nurse keep a hand on the fundus of the uterus for fifteen minutes or half an hour after delivery, there will be few cases of post-partum hemorrhage. In the first fifty cases he saw in the hospital there were three cases of post-partum hemorrhage. It was a time when they were instructing the students and the women were neglected. After that they made it a rule to have the nurse hold a hand on the fundus for half an hour after delivery, and in the two hundred succeeding cases there was not a case of post-partum hemorrhage. He has not looked up the hospital records as to the use of forceps. Forceps are used about once in twelve cases. Occasionally the cervix and peritoneum are torn through the use of forceps, and occasionally the peritoneum can be saved by the use of forceps, so that the one offsets the other. In these lacerations he thinks it is quite proper to repair them at once. As to mortality, he knows of one institution where it has been one death in fifty confinements for a number of years, and another where there have been five hundred confinements without a death, so that the mortality varies largely with the class of cases. In New York City he looked it up some years ago, and in ten years' time, from 1870-80, it was one in eighty from sepsis.

Dr. J. C. Edgar said he thought the case of hemorrhage was interesting, and inquired whether the author of the paper introduced his hand into the uterus.

Dr. Hirons replied that he did.

Dr. Edgar said that independent of that fact, it seems to be well established that a woman who has a severe post-partum hemorrhage, whether internal or externally, is particularly susceptible to sepsis, and he should judge this case to be one of sepsis. This is particularly so in the premature interruption of pregnancy. It

seems to the speaker that there is something else, and he thinks it is Leopold who expresses it, besides the anæmia and the lowering of the vitality of the patient, namely, the local tissues have less resisting power, and bacterial infection occurs more quickly. The case of placenta prævia is interesting, because there was a spontaneous delivery with placenta prævia. It is drawn from most of the text-books that placenta prævia means operative interference. It is one of the most interesting things that the paper has brought out—the fact that one can find in some instances a spontaneous delivery with placenta prævia, just as normal and with as little loss of blood as in other cases. Dr. Tull has brought out an interesting and important point as regards post-partum hemorrhage. If the rule he suggests is followed, beginning in the second stage of labor and following down the fundus until the child is delivered, and then have it understood that the fundus is not to be left, but that the nurse shall watch it for a good hour, there will rarely be post-partum hemorrhage. It is most difficult to drill this into students. They do not see the necessity for it; they have never seen a real case of post-partum hemorrhage, and do not know what it is for a woman to bleed a quart in her uterus. The point about ergot is also interesting. He would like to ask the author of the paper why he did not give ergot except in four instances.

Dr. Hirons replied that some time ago he had formed the idea that it was not absolutely necessary, there was no positive indication for its use, and in cases where he has known it to be omitted it did not seem to be missed, and when given in ordinary cases in the usual dose or even with fibroid tumors, it had no appreciable effect. In three instances referred to it was given after the third stage of labor, in the case of placenta prævia it was given in the third stage.

Dr. Edgar said the question was one which would require hours for discussion. It has not been agitated recently in this country. He does not know exactly what stand to take now—he has been on both sides of the fence. He does not see any harm in ergot. In private practice he uses it, and yet thousands of cases are delivered at the hospital without it. At one time at the Maternity none was given for months, and now only one dose is given, and that after the completion of the third stage of labor. It does not do any harm, and adds to the comfort of the woman if given at the completion of the third stage. He does not believe in the continued use of it. At the Emergency Hospital, three years ago, some experiments were made with ergot, and the uterus was measured at the end of ten days, and he was waiting until he had several hundred cases in order to report them. As far as they went at the Emergency and

New York Maternity it certainly seemed that where it was given in moderate quantities the puerperium was easier, and the woman did not go out from the hospital with a discharge from her uterus.

Dr. McLEAN said that if he understood the paper aright as to the number of times that the head presented in the first position, it formed a very large percentage, and there seemed to be very few cases in which the cord was found upon the neck. Four or five cases is an exceedingly small number, and his experience would multiply it by five. He desires to endorse everything Drs. Tull and Edgar have said in regard to the attention to the uterus.

Dr. E. A. TUCKER said, concerning the use of ergot, that he gives it in private practice, and does not give it in the hospital. In the Sloane Maternity, it has not been used since January 1, 1894. The cases of secondary hemorrhage or post-partum hemorrhage have not been any more frequent than formerly. The reason he gives it outside is mainly because of the popular prejudice which exists in favor of it. Patients do not feel that they are properly taken care of unless they have it. He does not think it any safer, and does not relax any vigilance on account of giving it. He cannot imagine that a drachm of ergot will do very much good. The only cases he has seen in which he thought there was any effect was when he gave a drachm every fifteen minutes, and then the uterus began to act as if it was being stimulated by the ergot. As to the forceps, his preference is to use it pretty often, but only when indicated. Among practitioners he thinks it is used a great many times when it ought not to be, to save the practitioner's time. He has recently come across several cases where the forceps was put on in the first stage simply because the birth was not coming along as fast as the doctor would like. That is inexcusable. Where there is delay in the second stage, and any indication on the part of mother or child, he regards its use advisable. The number of times one uses forceps in a hundred cases would vary greatly. In one hundred the forceps might be used two or three times, and in another hundred twenty or thirty times. The forceps cases at the Sloane Maternity have been about twelve per cent., which is a high rate, but he knows positively that the instrument has not been used unless there was a distinct indication for it. Formerly the forceps was used only once or twice in a hundred cases, and that ratio maintained for a long time, but there were more serious results then than there would have been had the forceps been used oftener. Out of every hundred there are usually two or three cases where the child will certainly be lost if the forceps is not applied.

The PRESIDENT asked the author of the paper to state in clos-

ing what proportion of the cases reported were private cases, also the average time of labor, and the time the patients were confined to bed before they were able to go around. Those are important matters to be considered in treating patients in public or private practice. In the hospital the object is to get the patient out as soon as possible, and usually when they leave the hospital they must be in condition to go to work, whereas in private cases they are not under such necessity. As to ergot, there is one kind of sepsis which can be prevented by its use, and that is the sepsis which enters through the veins. When the head is crowding he always gives a dose of ergot, the idea being to get its effect in order to escape the depression which is brought on by the distension of the vulva, because there is always a period of rest immediately after that, and during that period, if the uterus is left alone, there will be hemorrhage in it behind the placenta, and the uterus, tired out with the effort, does not expel the blood, it becomes clotted and frequently is the cause of an internal hemorrhage. Where the placenta is detached it lies over the mouth of the uterus and prevents the expulsion of the blood. Less sepsis will be seen if ergot is used, particularly that one important kind which it is always horrifying to see, the kind that causes phlebitis, delirium, low temperature, and is almost absolutely fatal. That used to be seen occasionally in Bellevue Hospital before antiseptic methods were introduced. The point with regard to the nurse keeping her hand on the uterus is also most important. Otherwise there is grave danger of hemorrhage, especially if the patient is so covered with a binder that it is impossible for the nurse to get her hand underneath the binder quickly enough to do good work. As to placenta prævia, he thinks it would be better to call that "placenta lateralis." It does not mean that the endeavor to expel the child is going to detach the placenta. Placenta prævia is a serious thing if there is a central implantation, and almost always requires interference. Where there is lateral implantation it does not require anything but to know it is there. It is not placenta prævia. Where the placenta is over the cervix so that it absolutely blocks the way, either one or the other side or the whole has to be detached. He has seen nine of those cases of central implantation. They are not to be spoken of in the same terms as ordinary lateral implantations. Of the nine cases spoken of he did not lose any, and saved all the children except three, but all of them were in private practice. He believes in the frequent use of the forceps, but only when the necessity for it exists, and that is when labor is interfered with and progress is not made in the second stage, and there is danger to the child from prolonged com-

pression and to the mother from exhaustion from the effort to expel the child. He has never seen any bad results from the use of the forceps where they were properly used. Of course, if the forceps are put on and the operator pulls against the pubes and lacerates the cervix there will be injury to the soft parts. He has never seen the mortality statistics made worse, but on the contrary better, by the use of the forceps. As to the examinations, he must take issue with the present teaching. There is not the slightest danger in examining any puerperal case, if he who examines is careful to render his hands aseptic. On the contrary, the physician can do a great deal better in labor if he does examine and follows the course of his cases instead of relying on external manipulation. As to post-partum hemorrhage, in his private practice he has never seen it but twice where forceps were used. He agrees with Dr. Edgar's statement as to following down the uterus with the hand from the time the head commences to crowd right through the third stage. In private practice, where there is little sepsis, there is also very little post-partum hemorrhage; but in public hospitals, where there is sepsis and the patients have been exposed to it they are liable to have weak uteri, which do not respond after labor, and post-partum hemorrhage follows with all its attendant complications.

Dr. Hirons (in closing) said that the cases he had reported were private cases. He has no prejudice against the use of ergot or forceps, but in none of these cases did the second stage last more than three or four hours. A woman who is going to remain in bed ten days does not require any special amount of ergot to ensure a rapid and safe convalescence. In the cases of hemorrhage which he referred to the women had not before had children in eight or ten years, and probably it was the effect of the lacerations upon the nervous system, which had some influence in causing the uterus to fail to contract.

Dr. R. B. Talbot exhibited an instrument, being a shield and tenaculum for use in repairing lacerations of the cervix or perineum.

Discussion.

Dr. Boldt said that while very few people now used silk to do the operation, for that particular purpose the instrument was well adapted.

The President said he thought the instrument would save time. Under the old method there was a very great deal of effort with but little effect.

Official Transactions.

A. M. Jacobus, *Secretary.*

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, February 19, 1897.

The *President*, ADDISON H. FOSTER, M.D., in the Chair.

Missed Abortion.

Dr. A. J. LYONS: The specimen which I show you is a mummified fœtus, not developed beyond three months. The patient from whom this was obtained aborted two days ago, and had been pregnant between six and seven months. She missed her menstrual period, which should have occurred on or about August 10, 1896. I was called soon after that date, because she had suffered exceedingly with nausea and vomiting, accompanied with about all the other recognized signs and symptoms of pregnancy. I then replaced a retro-displaced uterus and gave instructions that the knee chest position be taken daily. As I had occasion to see the woman once each month, I was pleased to note a natural development of the uterus until about November 29, when quite a severe hemorrhage took place without any apparent cause. Rest in bed with hot douches, seemed to entirely relieve all symptoms, and the patient was soon able to be up and about again. However, it soon became noticeable that an arrest of development had taken place immediately following the hemorrhage, but as I advised against interference until labor pains began, she finally became of the opinion she was not pregnant, but I was certain that examination proved her to be pregnant. The progress of this case constitutes what is known as a "missed abortion," that is to say, the woman aborted on November 29, 1896, but did not discharge the fœtus until February 17, 1897, almost three months afterwards. The liquor amnii was entirely absorbed, the membranes, as you see, are very thick, the child being rolled up in them very compactly. This is the second case of this kind I have had recently. The other one, I believe, had been missed for a much longer period of time, but as the patient had just returned from Europe when the mass was discharged, I could not be as certain of the history as in the present case. The symptoms and conditions in both cases were alike, except the first case was further developed, and she made a slow recovery, while this patient experienced very few of the late symptoms.

The Consequences of Removing the Uterus.

By Weller Van Hook, M.D.

(See page 405.)

When, in operating for Septic Pelvic Disease, it becomes Necessary to remove the Ovaries, it is Usually Advisable to remove the Uterus also.

By Fernand Henrotin, M.D.

(See page 394.)

A Plea for Retention of the Uterus in Removing the Annexa for Septic Disease.

By Alex. H. Ferguson, M.D.

(See page 413.)

Discussion.

Dr. M. L. Harris: We must all admit that the question, as proposed to-night, is rather indefinite, but there is one thought which we can gather from it, namely, that it is absolutely necessary to sacrifice both the ovaries and tubes, consequently any remarks directed to conservatism are irrelevant in discussing this subject. We admit that conservatism is the most important part of the question, but as the subject under discussion absolutely excludes conservatism, we must leave that point untouched. Likewise we must exclude from consideration all such cases where there exists a specific indication for hysterectomy in some pathological condition of the uterus. If there be malignancy, myomata, or any other indication for hysterectomy, then those cases do not come under the proposition for discussion to-night. The question, then, which we are to resolve presents itself something as follows: (1) Is the uterus, after the removal of the ovaries and tubes, a useless organ to the economy? (2) Does the removal of the uterus in the class of cases under consideration contribute to a more rapid, perfect and permanent recovery of the patient?

We must consider that all active organs and tissues of the body have some function, and that they contribute to the individual some advantage, which enables it better to propagate its kind or to continue its own existence. In examining these functions, only in so

far as they concern us, we note there are two kinds, which we have termed metabolic and mechanical. Metabolic functions, those in which an organ elaborates some product or products which are essential to growth and life, such as the thyroid, for instance, or from some selective affinity, either destroy or eliminate some products which are inimical to the life of the individual, as, for example, the kidney. Mechanical functions are secondary, and in this connection I would mention the ureter and the bladder. Their functions are mechanical entirely, as they simply serve for the transmission of the urine, and for its temporary reception and expulsion. The ovaries possess unmistakable metabolic function. Comparative anatomy and embryology teach that the uterus is simply a differentiated portion of an excretory duct. Primarily, the metabolic ovary is provided with a simple excretory duct. It is a duct of the simplest kind, extending from very near the ovary to the exterior of the body, having absolutely no other function than the mechanical function of transmitting the products of the ovary to the exterior. We find a portion of this duct is differentiated for the purpose of temporarily receiving and retaining the product of the ovary before eliminating it entirely from the body. This portion we find gradually differentiating until it becomes the uterus and the vagina. It is still simply a portion of the excretory duct, with no other function than a mechanical one. When the uterus has reached its highest differentiation it takes part in the function which we call menstruation. Here, perhaps, some will take issue with the fact that the uterus is entirely a mechanical organ, possibly being inclined to accept here a semi-metabolic function. However, I am not prepared to accept this, notwithstanding that the uterus periodically acts in eliminating an amount of blood, consequently a portion of the excess of nitrogen which is retained during the pre-menstrual period, as this is secondary entirely to the metabolic function of the ovary. One other mechanical function of the uterus, or simply a part of its mechanical function, is the part it plays in the formation of the so-called diaphragm of the pelvis. That has already been referred to, but Dr. Ferguson's remarks concerning the value of the lateral ligaments are not applicable to the question. In the cases under consideration the lateral ligaments are necessarily lost, consequently that argument loses its force.

I would like to call attention here to the analogy which exists between the generative organs and the urinary organs. We have in both a metabolic organ provided with an excretory duct. Primarily, that is, biologically considered, this excretory duct is common to the two organs, the mesonephros and the ovary. Both excrete

or eliminate their products through a common duct. Later we find a separate duct for each organ, and in each duct is developed a receptacle; in the duct from the kidney, the bladder, in that from the ovary, the uterus. The receptacles are simply differentiations of the excretory ducts, and are both for mechanical purposes.

The common method of infection in both of these systems is identical, that is, infection extends distalo-proximally. In the urinary organs infection extends from the urethra to the bladder, then through the ureters to the kidneys. In the generative organs infection takes place from the vagina to the cervix, from the cervix to the corpus, from the corpus to the tubes, from the tubes to the peritoneum and ovaries. The difficulty of eradicating infection which has extended up the urinary and genital tracts is well-known. Delbet says concerning the progress of metritis, "It is persistent, having little or no tendency to spontaneous recovery. The lesions have a tendency to advance step by step, from the neck to the corpus, from the corpus to the tubes, and from the tubes to the peritoneum."

The functions of the uterus being entirely secondary and mechanical, the uterus can be of no essential use to the economy after the removal of the ovaries, the organs upon which the function of the uterus depends. The only exception to this is the mechanical function of the uterus in preserving the floor of the pelvis, and whether this be great or small is a question to be determined from our cases. Personally, I do not think it is great.

Much has been said with reference to the symptoms resulting from removal of the uterus and appendages. The symptoms which result from the removal of the uterus and appendages are due entirely to the removal of the organs possessing metabolic functions—the ovaries—and can in no way be attributed to the hysterectomy, *per se*. The symptoms which result from castration have been recently presented in a very elaborate form by Canu* in a series of cases operated upon by Le Bec. Subsequent to the castration he sent out letters of inquiry containing a series of thirty-five questions. He received replies from seventy-five, and he had one hundred and two cases from which his table of symptoms was made. He has tabulated these in a very elaborate way. I will not read them, except to give you simply the headings of the symptoms. These symptoms are as follows: Pain in the abdomen, pain in back, joints and hip, loss of strength, sense of constriction of the neck, nervous disturbances with crises and without nervous crises, headache, irasci-

* Rev. Med. Chir. des. Mal. des Femmes, 1896, xviii. 455.

bility and nervous hypochondriasis, diminution of sight, chills with sweats, pruritis, tympanites, enlargement of abdomen, dyspnœa and borborygmus, constipation, palpitation, painful micturition, vaginal discharge. The symptoms may be summed up in the term cachexia ovaripriva, and are due to the loss of the function of the ovaries. One point which he wished to bring out particularly, and which I desire to mention again, was concerning the loss of sexual desire. He went into this very carefully. He found that atresia of the vagina prevented coitus in nine cases. In nine cases the atresia of the vagina was so marked that it rendered coitus almost impossible. In twenty-two cases coitus was impossible on account of local pain. In fifty cases there was a suppression of desire, and in twenty a conservation of desire. Among the twenty cases with conservation of desire seven had menstrual flow more or less abundant. These symptoms, then, which I include under the heading of cachexia ovaripriva are due, as I think, entirely to the removal of the ovaries, and the hysterectomy plays absolutely no part in them, consequently the removal of the uterus does not remove from the patient any function whatsoever after the ovaries are taken out.

The second part of the question is, does the removal of the uterus contribute to a more rapid, perfect and permanent recovery of the patient? The first thing to be considered is primary mortality. This we know to be very small. The primary mortality is not such as to militate against the operation in this particular class of cases. Statistics are abundant on the subject. Among 746 hysterectomies* in this class of cases the mortality was only 5 per cent. among several operators, consequently the primary mortality rate would not militate against the removal of the uterus. As I said in the beginning of my remarks, the subject under discussion is not definite enough, in that it does not state what is meant by septic pelvic disease. But I take it that it does not mean simple pyosalpinx. I take it that it means septic infection of the pelvis in its broadest sense. We may have a pyosalpinx that has ruptured, or we may have abscesses in the peritoneal cavity that are circumscribed, abscesses in the cul-de-sac, abscesses anterior to the broad ligaments, and abscesses in the broad ligaments themselves. Those are the cases which I consider this proposition means, and not simply cases of ordinary pyosalpinx. In such cases the uterus in many instances forms a part of the abscess wall, and it is only in them that I consider hysterectomy, irrespective of the method of performing it, is indicated. In those cases, there is no doubt, from the statis-

* Hartmann—Annales de Gyn. et d' Obst. 1896, xvi. 190.

tics at our command, as well as from personal observation, that patients do more rapidly and perfectly recover when a hysterectomy has been performed than when it has not. In support of this argument we may mention the number of secondary hysterectomies that different operators have been obliged to perform after having done primary salpingo-oöphorectomies in this class of cases. Quoting from Bouilly, Segond has had 10 secondary hysterectomies; Richelot, 36; Jacobs, 5; Delagéniere, 3; Picque, 1; Pozzi, 1; Bouilly, 11. Here are sixty-seven cases in which seven different operators have been obliged to resort to secondary hysterectomy in cases that were not cured by primary operations. I have been obliged to do a secondary hysterectomy once in a case where I had performed salpingo-oöphorectomy. This patient made a complete recovery only after the hysterectomy, the first operation failed to relieve her. When I asked her in reference to her sexual desire, one year after last operation, she said that she had not enjoyed sexual intercourse so much for years as during the past few months since the operation. In other cases which do not come under this heading, but which admit of conservative surgery, I am distinctly not in favor of hysterectomy.

Dr. Henry P. Newman: There is very little to be said after the subject has been so thoroughly gone over, pro and con, by the essayists. The general propositions advanced by those favoring the removal of the uterus along with the appendages are (1) that there is a more rapid, complete and permanent recovery; (2) that the uterus thus mutilated is a useless organ, a mere excretory duct, as claimed by Dr. Harris. As regards the first proposition, we all admit that a radical surgical procedure will sometimes more speedily dispose of a case than a conservative one, as, for instance, in necrosis of the tibia. When this is treated with the usual procedure of scraping, the patient, perhaps bedridden for a considerable time, recovery is retarded, whereas the health of the individual would be more speedily restored should a surgeon be called in to operate in a more radical way and amputate the limb. But no surgeon would favor such a procedure. The gynæcologist and the surgeon alike have in view the preservation of structure and the prevention of mutilation. The completeness of the cure cannot be established until time has elapsed sufficient for readjustment of the normal relations of the system, recovery from all disturbing effects of the operation and the preceding disease. In case of evident failure or imperfect results we should look for the cause in some faulty technique perhaps, rather than condemn too hastily an unoffending uterus. As in many instances the pathology is that of pus tubes or

septic disease of the appendages, it will not be necessary to remove even the immediate organs involved, but we will simply adopt the method of treating abscesses by direct incision and drainage, preserving organs that are now extirpated and relieving by subsequent operation if necessary any deleterious results that may have occurred from the inflammatory trouble.

In regard to the claim that the uterus is a useless organ, a mere appendage, so to speak, of the ovaries and tubes, I do not think this is proven by any means, or that it has merely a mechanical function. Certainly its importance in sustaining the pelvic floor is one that deserves some consideration. It serves as a support to the floor of the pelvis, and the diaphragmatic action of this structure is necessarily interfered with by so mutilating a procedure as removal of the uterus and its annexa. When the uterus is removed adhesions invariably occur, there is more or less distortion of the pelvic floor, and the diaphragmatic action, which is so essential to the proper function and circulation of neighboring viscera, as well as the sustaining power which it has as regards the superimposed viscera, is interfered with. It may be a mere accident, but I have examined a considerable number of cases after extirpation of the uterus in which there was more or less sagging of the abdominal viscera with the pelvic floor. There was ptosis of the stomach, intestine and of the kidney. I have seen this frequently. We know that in pendulous conditions of the abdomen we are very apt to have the viscera above more or less displaced, and after removal of the uterus why should we not have like conditions from sagging of the pelvic floor? Then, too, we have interference with the function of neighboring organs, as the bowel, the ureters and bladder, and if disturbance occurs it is apt to be more or less permanent. Before removing the uterus, we should be fully satisfied that it has no other office than that of a mere excretory duct, leading from the ovaries and tubes, and that no ethical consideration of the patient's physical welfare contra-indicates the procedure. The general proposition is one that carries us away from the best surgery of the day, and is rather inclined to be retrogressive than progressive, as the tendency at the present time is along the line of preserving organs and structures. The morale and the many perhaps minor details that enter into this subject have been very wisely and carefully handled. At the same time, I feel as if we ought to sustain the more conservative methods, look in the future to a more careful technique in extirpating the appendages in order to do away with the painful and protracted sequelæ that sometimes occur.

Dr. John T. Binkley, Jr.: This is a subject in which I am very

much interested. I may in registering my experience in this matter repeat, but shall try to be brief.

The functions and the early anatomy of the pelvic organs have been dwelt upon so clearly by Dr. Harris that I can add nothing to it. As you all know, this was a subject that our President had under consideration, and addressed every member of the society a card, asking his opinion regarding the necessary procedure in such conditions. Now, it is a question, how different men interpreted his inquiries, and what they mean by septic pelvic diseases. Every man has answered this postal card according to his own experience, and I do not see how he could do differently. My own experience enables me to concur in nearly all Dr. Henrotin has said. I am heartily in accord with him, but am not so enthusiastic as he seems to be. I believe that those who oppose removing the uterus, faintly see a "red flag" when it does not exist. I am sure no gynæcologist adopts any method in his work other than that which in his experience enables him to obtain the best results. He does not remove the uterus simply because it is there, or because he is operating, and wants to do a little more extensive work. Every gynæcologist wants the best possible results. He wants his patients to get well, and if he believes they will get well by removing the uterus under such conditions as we have under discussion, this procedure should be carried out. I do not believe I have removed the uterus in more than 15 per cent. of my cases of septic pelvic disease. I have been gratified with the results in every instance, and I have had no cause to regret it. My mortality, nil. I have never lost a case in which I have removed the uterus, consequently I have great respect for hysterectomy. I have had a great many cases upon which I have operated, but not as many as some of the gentlemen who are here. I have also assisted a gentleman who has operated a great number of times for removal of the uterus, and I asked him the other day if he would not come down and discuss this subject to-night, and he replied that he would be very much criticised for doing it. I refer to Dr. Byford. I have recently read an article by him in the *American Journal of Obstetrics* on this subject in which he favors the removal of the uterus in the class of cases under discussion, and I have recently seen him do two or three hysterectomies. So his opinion concurs with that of Dr. Henrotin. Dr. Van Hook takes very much the same position that I do myself in septic pelvic diseases. I have interpreted the inquiry made by our President to mean septic diseases of the pelvis, in which there may be pyosalpinx, or an abscess in the pelvis that is circumscribed, the uterus being one of the walls of the circumscribed abscess on one or both sides. I do not mean an ab-

scess lying against the uterus, but where a membrane lies between the uterus and the abscess, so that in ripping it loose we denude the uterus of its peritoneum. As an evidence of how quickly adhesions will take place, I wish to refer to a case upon which I operated a few days ago, a young woman for double pyosalpinx, in which there were extensive adhesions, and I was compelled to drain with narrow strips of gauze, freely packed in both fossæ up against the posterior wall of the uterus. Within twelve or fourteen hours I began to draw the gauze from the parietal adhesions so as to keep it loose and keep up the capillary action. It is my custom at the end of six or twelve hours to draw the gauze a little and place new top dressings on the abdomen. I label my gauzes either by knots or strings so as to know which to draw first. One piece of gauze, which I began to draw at the end of forty-eight hours after the packing, would not come. I could not start it. The piece of gauze was as wide as my four fingers, and in my endeavor to loosen it I twisted it both ways, and even then could not draw it. I then concluded that I might have passed a ligature through the gauze. I carried down a little probe, felt I could go below through the parietal wall between the gauze and sutures on each side. I carefully prepared the abdomen. I slipped my finger down and found that the omentum had become attached so tightly to the top fold of the gauze that I had to push it away before I could draw the gauze. This took place in forty-eight hours, the omentum having fallen up against the largely denuded peritoneal surface. This demonstrates the rapidity and character of adhesions in such cases.

Both Drs. Van Hook and Newman referred to conservative surgery, and made a rather peculiar comparison. Dr. Van Hook spoke of the tendency to save all of the stump end, if possible, and Dr. Newman says that we will employ the method of scraping in necrosis of the tibia rather than resort to the more formidable method of amputation of the limb. Both of these are acknowledged to be necessary members of the human economy. Naturally we will try to save as much of the tibia or end of the stump as possible. But it seems to me these comparisons have no bearing whatever on the question we are discussing. They are rather far-fetched, to say the least. The only case which Dr. Van Hook quotes, upon which he has operated, gives a satisfactory result, which, of course, is in accord with my own experience, as well as that of others who take the other side of this question. Do not think we are talking about uteri that are not diseased. How do we know that the ovary and tube are diseased? How do we know the pathology is marked or limited? Because we see and feel it. We see pus exuding from it.

We see the condition of the membranes and the piastic exudate thrown out all around it, and we see the same thing around the uterus. This is the kind of uterus we are talking about in this discussion.

Dr. Ferguson spoke of atrophy of the uterus following operation. I do not believe that statement can be absolutely proven, for the reason that we have fibroids developing in the uterus after the removal of the appendages. I exhibited a photograph at the last meeting of a case in which a fibroid had developed near the horn of the uterus after a double oöphorectomy had been performed. Furthermore, we all know that sufficient nourishment passes from the uterine vessels to support and to take care of the growth. Dr. Ferguson also says that if the uterus were normal, why extirpate it? So say we all. Who does it?

Dr. Ferguson says he knows of primary fatal cases of gonorrheal endometritis. Gentlemen, we do not remove the uterus because we are afraid it will prove fatal, but we do so for the reasons given by Dr. Henrotin and because of reflex disturbances. The fact that a considerable number of these cases, after having their appendages removed, come back is an argument in favor of removing the uterus at the primary operation. Dr. Ferguson quotes a number of cases in which there was great pain following operations for the removal of the uterus. Every gynæcologist and every surgeon knows that in the vast majority of cases pain does not follow the operation of hysterectomy. On the contrary, the reverse is the rule. We find patients coming to us with a pathological condition in the pelvis which is so marked that we can detect it from the physical appearance. We make an operation, remove the appendages, and then later find the symptoms of pain just as marked as before. At the primary operation we thought we had done a good thing, and perhaps had congratulated ourselves that we had relieved the patient, but we frequently find that very little relief is afforded by an incomplete operation of removing appendages only. These are the cases for hysterectomy. The patient may be better after the removal of the appendages. She may not become progressively worse, but she remains bad. That is our experience often.

I think Dr. Newman, in addition to making a very inconsistent comparison, is begging the question when he refers to drainage as a possible cure for septic pelvic disease.

Dr. Ferguson made a statement that seems to me very inconsistent when he said that the uterus forms a part of a suspension bridge, or that it acted as such in that it supported the pelvic viscera. One might as well say that a rider supports his horse by sitting on the horse's back.

With reference to those cases that have gotten what Dr. Ferguson designates as the "operative habit," I will say that my experience is limited to three in number. I could report them in detail if it were necessary before and after operation, but it would not enable me to make my point stronger than simply to say to you that these cases have been entirely relieved, to my certain knowledge.

A Plea Against Hysterectomy When Removing Diseased Appendages for Septic Pelvic Disease.

By F. H. Martin, M.D.

(See page 400.)

Dr. Nicholas Senn: The papers read and the remarks made seem to refer to anything else except the subject under discussion. The wording of the subject we are expected to discuss to-night is exceedingly unfortunate, in that it limits our discussion to the necessity of removing the uterus in septic disease, requiring the removal of the ovaries and tubes. If we were to limit our remarks to the legitimate subject of the discussion, very few gentlemen would have anything to say. It seems to me that the whole trend of the discussion thus far has been to speak more from a practical than from a scientific standpoint. In order to discuss this subject intelligently, it is necessary to lay down a scientific pathological foundation; in other words, we ought to know what we mean by a septic inflammation of the tubes and ovaries requiring operative interference, and the necessity of removing the uterus at the same time. I am sure that every gentleman present is aware of the well-known pathological fact that septic processes originating in the uterus seldom extend to the tubes and ovaries by continuity of surface. I had hoped that we should learn to discuss more thoroughly the subject I would like to see discussed in this society, namely, the proper modern treatment of pelvic suppuration as the general practitioner meets it. In the first place, we have to eliminate from our subject all gonorrheal inflammations involving the uterus, tubes and ovaries, uncomplicated by a mixed infection. We have heard to-night a good deal about the necessity of removing the ovaries and tubes and even the uterus, in cases of gonorrheal inflammation. You all know that the gonococcus exerts a specific influence upon pre-existing cells; it is not a genuine pus microbe, as every gynæcologist knows. All it can and will do is to produce a circumscribed inflammation with very little tendency to extension, in contradis-

tinction to the microbes that produce septic infection—the pus microbes. We have said very little in reference to genuine septic infection of the uterus and its appendages. The pus microbes, if they are introduced into the uterus and enter a pre-existing infection atrium, diffuse themselves through three distinct pathways, either through the connective tissue spaces, the uterine veins, or, in preference through the lymphatic channels. Septic inflammations, originating in the uterus and extending to the appendages, and particularly to the connective tissue, resulting in the formation of circumscribed suppurative lesions, are the conditions which we ought to discuss instead of spending the evening in discussing subjects entirely remote from the legitimate subject under consideration.

As the hour is late, I will formulate my ideas in reference to the subject very briefly. The uterus acts as a pathway for septic infection of its annexa and the adjacent connective tissue without being permanently damaged; in other words, the infection atrium through which the septic microbes enter uterine tissue, and from there the connective tissue spaces, blood vessels, or lymphatics, reach tissues or organs that are better predisposed for suppurative inflammation, where they produce their specific pathogenic effect. The fallopian tubes to the ovaries are not often affected primarily, but the adjacent peritoneum and connective tissue are the favorite seat of localization, resulting in a circumscribed, diffuse peritonitis, or in a circumscribed, so-called cellulitis, phlegmonous inflammation. It is only in cases that tend to destroy or shorten life that I would unhesitatingly advocate and practice extirpation of this organ, the uterus, in which is the intrinsic seat of a disease; that is, in cases of septic thrombo-phlebitis, as we find it in the parturient woman, in women occasionally subjected to operative treatment without the necessary antiseptic precaution, and that means infection of the veins of the uterus, so liable to result later in fatal pyæmia. It is in such cases that hysterectomy occasionally, if the disease is recognized in time, will save life. In other cases in which the infection takes place through the lymphatics, as we find it particularly in a recent parturient woman, where the septic process extends to the adjacent peritoneal cavity or to the connective tissue around the uterus, there is a legitimate indication for a primary hysterectomy. But you will all agree with me that it requires the greatest diagnostic skill to set down indications with sufficient clearness to warrant such a mutilating procedure. In cases in which the uterus acts as a temporary pathway for infection, where the infection localizes itself outside of the organ independently of the peritoneal cavity, in the connective tissues, I would limit my surgical procedures, as I

would in any other locality, after diagnosticating and localizing the exact focus with sufficient accuracy to attack it, to incision and drainage, knowing well that by liberating the suppurative product, the uterus having served the purpose of a temporary pathway for infection, it will recover its integrity and return to its normal condition, as every obstetrician can testify. I believe the gynæcologists will do more for their department in surgery by working conservatively than by mutilating procedures.

I was very much astonished indeed when Dr. Harris made his comparison between the bladder and the uterus. Such a comparison is odious, strange, and requires no remarks on my part. The bladder a reservoir for excretions, the uterus a part and parcel of an important generative tract, which, during pregnancy and during the life of the woman performs a most important function. It is more than a mechanical apparatus; it is an organ endowed with special and high functions, and certainly deserves the respect of every modern gynæcologist.

Dr. Henrotin, who, for a short time has figured among us, is a disciple of the great Péan and Segond, and advocated the removal of the uterus for all pelvic and suppurative lesions, has become recently more conservative in his ideas. His paper to-night is characteristic. We find that it contains many "ifs," so many modifying circumstances, that we look in vain for such positive views such as were advanced in the past. I know from my personal observation that he does not practice what he preaches. I have seen Dr. Henrotin cut through the vaginal wall into the pelvis, in order to remove suppurating tubes and ovaries, and leave the uterus *in situ*. Whether he found it necessary to remove the uterus afterwards, I do not know. But I do know that the practice with him not to remove the uterus is becoming more common, and I trust I shall have the pleasure of hearing, from time to time as he presents his views, that he is becoming more and more conservative.

Dr. Reuben Peterson: As the hour is late, I shall be as brief as possible. I would take exception to the remark made once or twice during the discussion that the removal of the uterus for septic pelvic disease is a retrograde step in gynæcology. I most firmly believe that this is not true. Dr. Henrotin, in his statement of the facts dealt with a limited class of cases. His remarks had particular reference to those cases in which the appendages were irreparably diseased. The only point that the gynæcologists to-day are disputing about is whether in the majority of such cases the uterus is sufficiently diseased to warrant its removal at the time of the primary operation. That question can only be answered on patho-

logical grounds. As a temporary expedient, we may take out more uteri now than we will later, but the ultimate answer to the question can only be made on pathological grounds. In other words, can we save the uterus by less radical procedures. Just because some of our cases do not get well after the removal of both appendages is no reason for adopting the universal rule that we should remove the uterus every time that it becomes necessary to remove these organs. This is begging the question. In a considerable number of operations of removal of both appendages for purulent disease, I find that the majority of my patients have been cured pathologically and symptomatically. A certain proportion of them have not been, and it has been my endeavor to find out what cases require the removal of the uterus at the primary operation.

Investigations have shown that the ravages of gonorrhœa within the uterine cavity are severe; that the disease not only penetrates the endometrium, but the uterine wall, and it remains with us to determine whether we can cure such an infected uterus by curettage and gauze drainage, and by other simpler means than hysterectomy. I do not believe that we should take the position of Schauta and others, who claim that the uterus should always be removed when, at the primary operation, the appendages are found to be infected by gonorrhœa. I believe we can cure many cases by simpler means and retain the uterus. Except in severe cases, the removal of the uterus does not add a great deal to the danger of the primary operation, and when this additional procedure would jeopardize the life of the patient all experienced abdominal surgeons would leave the uterus *in situ*, no matter what their opinion upon the general proposition might be.

There is a class of cases in which I think the uterus should sometimes be removed, and that it where, during the enucleation of the appendages the uterus has been badly torn. You may leave the pelvis in as good condition as possible, yet the peritoneum has been torn from the uterus and there is increased danger of intestinal adhesions. We also frequently find cases of advanced pelvic disease where the abscess is on both sides, and it seems best to remove the uterus to obtain good drainage. I do not agree with Dr. Ferguson that we can get just as good drainage by opening the posterior cul-de-sac. When the uterus is removed we get better drainage and a more satisfactory result. The cases I have mentioned are only the exceptional ones.

With reference to tubercular disease of the appendages, when we can demonstrate its existence on the operating table, and the appendages are ablated, then the uterus should also be removed, for

fear that it be infected with tubercle bacilli. Tuberculosis of the female generative organs is a serious disease, and should be treated radically.

Dr. Joseph B. Bacon: I would like to make a few remarks with reference to the removal of the uterus and its relation to weakening the pelvic floor, with especial reference to the sigmoid flexure. You can demonstrate very well this sagging of the sigmoid in the dead-house. The sigmoid has a long mesentery, and it has a tendency, when loaded with fecal matter to lie not in the left side but deep in the pelvis, particularly in women who are constipated. In constipated women the removal of the uterus permits the pelvic floor to sag.

A few days ago I examined a woman at my clinic whose uterus and appendages were removed several years ago. The case was such a well-marked and typical illustration of sagging of the pelvic floor that I showed it to the students. When the uterus is removed along with the appendages it allows the loaded sigmoid to sag more and more in the pelvis, and tends to create an inflammation of the sigmoid. It seems to me that those who have advocated the removal of the uterus in connection with the appendages have not brought forth sufficient evidence to warrant the extirpation of this organ. They have not placed their cases upon a scientific basis. In some instances the uterus was removed, I understand, simply because of a discharge from the uterine cavity. It is only in recent years that surgeons, in removing pus tubes, have done so properly by thoroughly dissecting the tube well into the horn of the uterus, so that we only have comparatively recent statistics upon which to base our results. In some of the cases reported to-night the uterus was removed for reflex pain. To remove the uterus for reflex pains, without previously making a differential diagnosis of the condition of all the other pelvic organs, proves absolutely nothing.

A short time since I had a case where an ovary had been removed for intense pain. The operation was performed by a good man. He hesitated to remove the organ, but did so, and saw the mistake he had made afterwards. The patient was subsequently sent to me, and I found in the rectum a submucous cyst containing two ounces of fatty tissue and debris. This cyst had produced the characteristic pain. By pressing upon the cyst pain was reflected to other organs of the pelvis.

There are several points I would like to discuss, but as the hour is late I will not do so. As Dr. Byford's name has been men-

tioned in the discussion, and as he is not present, I wish to speak briefly for him. I have been intimately associated with him of late, and it is not his rule to remove the uterus with the appendages for suppurative pelvic disease.

Dr. J. A. Lyons: In the interest of non-mutilating surgery, I desire to put my stamp of disapproval upon such a proposition as is here presented for discussion.

Whatever our individual opinions may be upon the subject, I am satisfied that no unasked result will be obtained from a discussion of the question, for I am sure no hard and fast rule can be laid down for guidance in all operations for the septic pelvic diseases. I believe that there is a growing tendency on the part of the profession to regard the uterus as a useless organ, when deprived of its appendages, and that, as a consequence, it is sometimes removed simply because the ovaries are diseased.

In my opinion, it is advisable to leave a moderately healthy uterus, when the ovaries have to be sacrificed. Such a uterus in normal position will help maintain the pelvic diaphragm, and this diaphragmatic action of the pelvic floor will undoubtedly help preserve the normal position of the bladder and intestines.

The uterus in normal position and location helps prevent the bladder from being displaced posteriorly, the rectum, sigmoid flexure and other portions of the intestines from being displaced downwards and anteriorly. These organs are supported by the uterus, which acts as a prop to them, and they in turn help preserve the normal location of all the other abdominal organs. A complete hysterectomy does undoubtedly shorten the vagina, and in rare cases atrophy of the vulva and vagina results. After hysterectomy the pelvic floor sags downwards, hence gives no support to the organs above it, as originally intended, but rather tends to drag them with it, and vaginal hernias may result.

Many other reasons of an accidental character, such as injuries to the bladder, uterus and intestines, can be directly attributed to unnecessary removal of the uterus. Some of those organs have been opened into, tied off, or otherwise injured by the removal of the uterus, accidents, which in the majority of cases, are most unlikely to occur in doing salpingo-oöphorectomy. The injurious effects hysterectomy has upon the sympathetic and spinal nerves, if any, is not yet known. I now believe it is a duty incumbent on all gynæcologists to preserve every organ possible, as much as it is incumbent upon the general surgeon to save every finger, yes, even finger-nail possible.

The above remarks refer principally to clearly defined pus tubes, whose proximal ends are sufficiently small to tie off without injury to the uterus. However, there are frequently pus collections in the pelvis, especially those of an intraligamentous nature which involve the uterine wall, so that the uterine wall becomes a part of the abscess sac, or it occasionally happens that the abscess may originally form, having the uterine wall as a part of its membrane, the infection having taken place through the uterine lymph channels sometimes occurs as in cases of puerpural infection. In operating upon such cases, one would naturally feel called upon, at least in most cases, to do a hysterectomy, and I believe that some of our colleagues do always remove the entire organ, and indeed claim that such a procedure is almost universally necessary. My belief is that even many such cases can be practically cured without sacrificing the uterus. To illustrate, permit me to cite the following case:

About two years ago I was called upon to remove a pus tube which had formed soon after an acute attack of gonorrhea. Upon opening the abdomen and breaking up some adhesions, I discovered a tumor without pedicle, which was a tubo-ovarian abscess, and which involved the left lateral wall of the uterus. It was necessary to either do a hysterectomy or drain. I removed first the tube and ovary on the opposite side to overcome hemorrhage, and clamped the large abscess sac I referred to as close up to the uterus as possible, and tied off the broad ligament at the pelvic end, then cut between the clamps and uterus, dilated the left horn of the uterus, introduced through it several strands of silkworm gut as drainage into the uterine canal to the vagina, curetted the uterine surface of the abscess wall, cauterized it with carbolic acid and then approximated the peritoneal coverings as well as possible over the side of the tube and over the rest of this raw surface, and the patient is to-day enjoying the very best of health. The drainage was not through the abdominal wall, but through the dilated tube remnant into the uterine canal, a perfectly natural route for this particular case at least, and the results were as good as could be expected from any kind of drainage; in fact, the results were almost perfect.

I know further that many abscesses of this character can be and are drained successfully by some of our own Fellows, Drs. Byford, Watkins and F. H. Martin, to my certain knowledge, drain them so that uteri that might be removed by others are thereby preserved to their credit, and to the satisfaction as well as to the benefit of the patient.

I consider the operative procedures of my friend Watkins worthy of imitation. He saves not only all uteri possible, but also every portion of a healthy ovary possible. To-day I had the pleasure of examining a specimen of double pyosalpinx and a left ovarian abscess which he had just removed. On the right side the inflammatory action was so bad that it involved the appendix, necessitating its removal. Notwithstanding this fact, he preserved her right ovary, although it was necessary to puncture a number of cysts in it. He does this to preserve ovulation and menstruation.

To justify me in the remark "that the adhesions formed around packings for drainage frequently clear up entirely," I recall a very bad case of suppurative appendicitis, where nothing could be done but to simply incise and drain. A hernia subsequently followed, and during the operation for its removal, a very large mass of adhesions were easily seen, involving the intestines. The first herniotomy failed; a second one became necessary, when, to our surprise, all adhesions had entirely disappeared, and the intestines lay beautifully in the pelvis without an adhesion. The adhesions had been absorbed without an effort on our part to remove them.

Dr. FERGUSON (in closing): I wish to draw attention to one or two points. In the first place, I think in our plea for retention of the uterus we have the best of the argument. Dr. Henrotin has told us that he only removes the uterus in cases where there is a great deal of suppuration. Dr. Binkley is also with us, although he says he has had a success of 100 per cent. in fifteen cases of hysterectomy after salpingo-oöphorectomy. I do not doubt it, yet at the same time, it is positively wrong to base one's percentage of recoveries on a few cases. Some time since I did a pylorectomy for carcinoma of the pylorus, and the patient recovered. It would be unjust for me to draw many conclusions from that one case. I believe in Germany the percentage of recoveries is not allowed to go into print unless the surgeon has operated on one hundred cases. Dr. Henrotin presents a strong argument in favor of secondary hysterectomy, but not primary. Secondary hysterectomy may be done, not for pyogenic infection, but for myoma of the uterus, as in the case presented here. So in all of the cases where secondary extirpation of the uterus is performed, it may be done for something else. The position I take is that primary amputation of the uterus for septic pelvic disease should not be frequently done, that is, not nearly in 50 per cent. of the cases where the appendages are removed, as our subject for this evening's discussion proposes.

I am sorry Dr. Senn has left the room. His remarks were astonishing to me. He comes before this learned society with a cold shower bath by saying all our remarks this evening have been irrelevant, and yet he takes up this important question almost word for word and discusses it. He talks about puerperal infection, gonorrhea, and of the pus microbes, and all this is what we have been talking about in connection with the uterus. These belong to the subject under consideration. I for one have not to stand such sweeping remarks as he has administered to us to-night, but I understand (since) that they were all intended for the speakers on the affirmative side of the question.

Official Transactions.

T. J. Watkins, *Editor of Society.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, February 4, 1897.

J. M. Baldy, M.D., in the Chair.

A Contribution to the Technique of Operations for the Cure of Laceration of the Pelvic Floor in Women.

By C. P. Noble, M.D.

(See page 423.)

Discussion.

Dr. R. C. Norris: I have listened with a great deal of interest to Dr. Noble's paper, and through his kindness had an opportunity to witness him perform the operation he has described. I must say that I thoroughly appreciate his efforts to find the torn ends of the levator ani muscle, but it has always been my impression that Emmet's operation aimed to do this, as well as to bring together the torn fascia and to take up the slack of the posterior vaginal wall. It was my pleasure some four years ago to see Dr. Emmet do this operation himself, and I remember distinctly that when he came to introduce the crown stitch he called attention to the fact that the needle must be thrust in deeply and laterally, and fearlessly so far as the rectum is concerned, to catch the retracted end of the torn muscle and its sheath of fascia, so that, whether or not his book descriptions leave out this fact, in his own mind he certainly intends his operation to repair the injuries to the levatores ani muscles. Now, I have thought that I have been doing Dr. Emmet's operation practically in the way Dr. Noble has described the operation he prefers. The only difference is this: Dr. Noble does not lay much stress on the stitches being placed in the sulci in a V-shaped manner. When the baby's head passes through the vagina it often tears the mucous membrane from its subjacent attachments. I believe Dr. Emmet's V-shaped stitches help to pull back and fix the mucous membrane to the place whence it was separated by the traumatism of labor. In other words, the application of the V-shaped sutures is made to take up the slack of

the vaginal mucous membrane. If my understanding of the anatomical arrangement of the muscle is correct, the muscle is swung across the floor of the pelvis, acting as a sling, the two muscles meeting in a median line by a tendinous union. The vast majority of lacerations that I find start with the perineal body, extend upwards for a certain distance, and then run up one or both vaginal suci.

When such patient is examined months after the occurrence of the injury, if we place a finger against the posterior vaginal wall and get the patient to contract the uninjured fibres of the muscle, we can outline distinctly how far up each sulcus the laceration has extended.

In other words, we can find the triangles distinctly; our finger will dip into the pelvic floor between the torn and retracted ends of the muscle and fascia. I take it the stitches introduced by Dr. Emmet are meant to catch and bring together these retracted ends of fascia and muscle. We know that when a muscle has been torn we never can get the two ends connected by muscle union; it must be by fascia.

If we bring the torn ends together after denudation there is fascial union, which enables the muscle to act almost as well as before it was lacerated. Therefore I believe that the stitches should be V-shaped for the reasons not only that they bring together in each sulcus the ends of the torn muscle, but they do more—they draw up the slack of the mucous membrane. The last two V-shaped sutures and the crown stitch in Emmet's operation accomplished what Dr. Noble aims to do. The only difference is that Dr. Noble uses a single stitch, W-shaped, instead of two V-shaped sutures. If Dr. Noble would cut his suture at the crest of the rectocele and tie the two halves separately, he would have two V-shaped sutures and would obtain a more correct anatomical arrangement of the ends of the muscle.

Dr. Noble states that Emmet's operation brings a tongue of tissue between the ends of the muscles and prevents their union. This is a mistake. The result depends upon how high in the posterior vaginal wall the point is selected through which the crown stitch will pass. That point, when slightly put on the stretch, is flush with the orifice of the urethra, and that point will be the posterior commissure.

Emmet aims to bring together the ends of the anterior border of the muscle beneath that point and in front of the rectum. When we come to introduce the crown stitch it is exactly the same as the second perineal stitch of Dr. Noble's operation. When I saw Dr.

Emmet do his operation he held his needle in such a manner that he plunged it laterally and far back, so that he could not miss the end of the muscle. It is not necessary to push the rectum back. Emmet's crown stitch necessarily brings together the ends of the fascia and muscle in front of the rectum. It has occurred to me, as I heard Dr. Noble read his paper, that the essential point of his operation is to find the ends of the muscle. While I don't actually cut with knife or scissors until I find the ends of the muscle, it is my custom to plunge a tenaculum in at this point, to bring out the ends while passing the needle. I saw, two years ago, Dr. Baldy operate for a laceration extending through the sphincter, and I was impressed by the fact that after making denudation over the end of the sphincter muscle he plunged a tenaculum in and drew the end of the muscle forward, recognizing this fact by placing a finger against the posterior margin of the anus. He then passed the needle through. Since it is just as essential to be sure to catch the ends of the muscle in the posterior wall of the vagina, I use a tenaculum in a similar manner in performing Emmet's operation for laceration of the pelvic floor.

That the muscle has been brought together, operating according to the plan of Emmet, I have tested time and time again. Weeks and months after the operation I have placed my finger against the posterior vaginal wall, have asked the patient to contract the levator muscle and have felt it stand out against the finger as a distinct band, which assured me that union had occurred.

To sum up, I think Dr. Noble has done much for all of us by insisting upon the necessity of bringing together the ends of the muscles. Some men may have been careless in this regard, but I think Dr. Emmet had this in mind, and I think we must not lose sight of the facts that the fascial laceration and the slipping forward and downward of the posterior vaginal wall should also be taken into consideration, as well as the laceration of the muscle. So much am I impressed with the value of the union of the ends of the muscle, that I never think of doing a primary operation after labor without using a tenaculum to draw out the retracted ends of the muscle, in order to feel sure that the needle has passed through them. Dr. Noble, in doing his operation, has apparently worked along the same lines as did Emmet, has brought out prominently the necessity for finding the ends of the muscle, and has reassured himself by dissecting down to them. Whether or not this is necessary I am scarcely convinced, since I believe myself that muscle union is impossible, and it is only necessary to be sure that the needle passes through the ends of the muscle. As to uniting the anterior border of the levator-ani to the sphincter muscle, it seems to me it is a very good thing to

do. It would make the operation more complete to stitch the sphincter muscle to the anterior border of the levator muscle. The absolute necessity of performing Emmet's operation in cases of great relaxation with rectocele is demonstrated to every operator from time to time. At present I have under my care a case on which I have performed an Emmet operation. She has had two other prior operations, which have been done by very distinguished operators, who made no attempt at union of the muscles and fascia. This time that has been accomplished, with, I am quite certain, a good result. I was very glad to see Dr. Noble operate, but I must say candidly that he has failed to convince me either of material difference from or superiority of his operation over that of Emmet, an operation which I am sure will make Emmet's name live in the annals of plastic surgery for many years to come.

Dr. Geo. Erety Shoemaker: Seeing Dr. Noble operate and demonstrate his ideas gave me the impression that the chief value of his contribution was in attracting notice in a formal manner to the muscle ends. I feel sure that this has not been done in print to a sufficient degree, and that there is a great difference in the conception of Emmet's operation in the minds of different men. It must be admitted that if one leaves a long undenuded tongue in the posterior wall of the vagina, if one leaves this tongue very broad, and if in introducing the crown suture and sutures below the crown suture, one picks up the superficial tissue only at the caruncle at the side, and does not go deeply into the sulci; then the resulting posterior wall will often be very thin and very broad. Rectocele will follow in time after Emmet's operation so done. If this is not done, if the tongue above is short and narrow, if the V-sutures are put deeply into the sulci, it seems to me that the same result is accomplished, as the ends of the muscle are probably grasped unconsciously by many operators. I think that many who read the discussion of this operation will be enabled to make better perineums by having their attention strongly and accurately drawn to the fact that the ends of the levator muscle can be made to stand out just as the torn ends of the sphincter ani muscle stand out, and that they can be grasped by stitches in the same definite manner.

Dr. W. S. Stewart: I was very much interested in the paper read by Dr. Noble. I think with the rest of the speakers that, whilst perhaps Emmet has not absolutely described the importance of drawing together the levator ani muscle, still I think the intention was always with him to make his sutures such as to draw together the two muscles, for such they really are. The two muscles meet in the centre of the vagina and form a sort of raphé, and therefore are more

likely to tear on each side than in the centre. I think with Dr. Norris that the deep stitches are important to draw muscles together and keep them in apposition. I have never been in the habit of making my crown stitches by letting the thread just pass through to the apex, but even then made it go beneath and catch with muscular tissue, introducing my finger into the rectum so that I would be able to know where my needle was passing along deeply in the tissues, using a large curved needle, which, I believe, is not the case with the majority of operators.

Dr. J. M. Baldy: The matter is one of such considerable interest to practical men that it seems to me when we have such a paper before us it cannot be too thoroughly discussed. If I understood Dr. Noble's paper he claims three points in favor of his operation over that of Emmet's.

In the first place, he stated that Emmet's operation shortened the vagina. In the second place, that the ends of the muscles were not brought together in the Emmet operation, and that they were in his. In the third place, that the crown stitch in the Emmet operation acted as a preventative in bringing the muscle ends themselves together. If I understand correctly these are the essential points in the discussion between the two procedures. Dr. Noble's is a mere evolution of the Emmet operation, as he himself states, and is, I think, inferior in the points of modification. Again, a number of points he claims as his modifications are essential to the Emmet operation, the misunderstanding arising from a lack of exact knowledge of the Emmet operation by Dr. Noble.

Taking Dr. Norris' illustration (as drawn on the board) of the condition of the levator ani muscle coming from one side of the pelvis and then from the other and forming a sling; that is an exceedingly faulty picture of the levator ani. It seems to me many points in the discussion hang on that muscle. My understanding of the levator muscle is this: that it comes from the side of the pelvis and does not unite as a muscular body, but unites by an aponeurosis. The muscle does not unite over the sides and top of the vagina, belly of muscle to belly of muscle, but unites aponeurosis to aponeurosis. I would call attention to one point in regard to Dr. Noble's demonstration: Dr. Noble denudes the rectum for half an inch or more further back towards the cervix than does Emmet. That is done with the distinct object that the muscles from the side of the pelvic wall can be brought together directly across the top of the vagina and unite by muscular union on top of and over the rectum. I can only say that this condition never so existed naturally. Originally the muscle joined the sides of the vagina and spread over it through

the medium of an aponeurosis. It is exactly this condition that the Emmet operation reproduces, and which the Noble modification does not.

After all the matter is one of pure mechanics, as has often been said by one of our members in this room, a good carpenter or a good blacksmith will make a good mechanical plastic surgeon. Considering the levator ani muscle as two muscles, that they are united in the median line by aponeurosis, any operation that will bring the ends of muscles together and form muscular union is a faulty one in considering its relations to the original condition.

The question arises: Can you bring the levator ani from both sides, unite it and get muscular union? Those of you who have done much operating upon torn sphincter ani muscles will hardly accept a mere statement to this effect as final. Take a perineum that has been torn ten or fifteen years. What is the result of any muscle that has been put at rest so long? Atrophy. Those who have repaired these atrophied muscles in sphincter ani tears know that the secret of success is either in stretching the muscle or in taking a knife and cutting the fibres; otherwise you will have failure of union. If you force the ends of the muscles together your stitches will cut out, and just as surely the ends of the muscle will retract to a greater or less degree. I don't say you will get a poor perineum, but I do say you will not get muscular union in the Noble operation. The stitches will inevitably cut, the muscles will retract, the union will be aponeurotic—the final result will be as in the Emmet operation and not as aimed at by Noble.

Dr. Noble claims that the vagina is foreshortened in the Emmet operation. If there is any virtue in Emmet's operation it is that it does *not* foreshorten the vagina. The man who says it does loses absolutely the whole point that Dr. Emmet has made, aside from the discussion on the muscles. The question of foreshortening is to my mind absolutely life or death to the operation. If I remember anything about the Emmet operation it is that he protects against foreshortening of the vagina, and I continually dwell on that point in teaching my students at the Polyclinic; it is *the* important element in the treatment of all tendency to prolapse.

Emmet's operation does not fix the rectocele outside the body or at the vulva, as Dr. Noble seems to understand. A tenaculum draws it back at the angle of each sulcus and the V-shaped sutures fix it back. It is for that very reason they are placed V-shaped. Dr. Emmet passes sutures precisely as they are pictured in the diagram, and he distinctly states that the sutures include muscle and fascia. This is accomplished by dipping the needle deep down under the

muscle, and my understanding has always been to dip deep, so as to reach the muscle. My understanding has always been not only to get fascia, but to get muscle. The idea of Dr. Emmet was that they were so intimately connected that if you draw one forward the other will come, too. In this respect, therefore, Dr. Noble offers nothing that Emmet has not long since taught, and taught much the better way of accomplishing. Each sulcus suture, then (in the Emmet), not only catches muscle and fascia and draws them to their original place at the side of the vagina, but also draws the rectocele back towards the cervix, where it originally belonged. Each suture placed draws back its proportional amount of vagina to the cervix and brings it back where it belongs, and you are lengthening the vagina again and you are restoring it to its original length from the vulva to the cervix. What is the result of that? Seeing that on both sides you have drawn the rectocele back, you have left anterior everything denuded.

Dr. Noble says when you place the crown stitch in the Emmet operation you drag the undenuded tongue of mucous membrane in between the labia and prevent union of the muscle ends. Here again he (Noble) misses the point, and advances something as new which is distinctly Emmet's. Dr. Emmet never pulls the rectocele down by his crown stitch, and if any one does so he does the operation faultily. Nor does Emmet unite the labia—any one who does so denudes too far out.

Discussion.

Dr. Noble: The fact that Dr. Norris has said that pretty much all I have done is Emmet's operation, and that Dr. Baldy has said that it is not, is rather confusing; but I think myself that the basis of it is the Emmet operation, modified as I have described.

The first point that Dr. Baldy has brought up is that of V-shaped sutures. I think the philosophy of the V-shaped suture is erroneous. The fact that the suture is passed V-shaped is much emphasized. You cannot get any fixed point on the median side of the vagina. Therefore the whole point is to pass the suture at as high a plane as you can hook it behind the muscle, and then you have something to pull on. It is not because the suture is put in in a V-shape, but because you get a fixed point around the muscle; that is the important thing to remember. If you will pass this suture superficially at the level of the mucous membrane and deeply through the muscle well down in the sulcus, it will draw the mucous membrane toward the anus, instead of rolling back the tissue toward the cervix.

Dr. R. C. Norris: I would like to ask if this (pointing to illustration on blackboard of the first suture in the sulcus that passes through the muscle) is a fixed point? Will not the suture, when tied, bring the lax tissues to that point?

Dr. Noble: The point becomes fixed only because the suture is passed behind the muscle. It draws the lax tissues toward the lateral vaginal wall because of that fact, and not because of its V-shape. As a matter of fact, if the suture is started superficially and is passed more deeply behind the muscle in the depths of the sulcus, when the suture is tied the tissues will be drawn downward toward the muscle, instead of upward toward the cervix.

Dr. Baldy: It is absolutely impossible to place that suture shallow at the top and deep at the bottom; it does exactly what Dr. Norris calls attention to—enters deep behind or through the muscle end, and comes out gradually until it emerges in the depths of the sulcus.

Dr. Noble: I am sure Dr. Baldy is in error. The suture can be passed as I have described. In fact, I habitually pass the two sutures below the crown stitch in this manner in order to bring the levator muscle ends together in front of the rectum. In other words, those gentlemen who get good results from V-suture do it in spite of its disadvantages.

The next point was what Dr. Norris said about holding the rectum back in order to permit the bringing together in the median line of the muscle ends. I am sure this discussion will have a very good effect upon our members in their perineal work. It is a physical impossibility to do what these gentlemen claim. From the edge of the levator muscle out to the skin where the crown stitch is introduced in the Emmet operation is from half to three-quarters of an inch. It is practically impossible to pass a suture through the skin down into the depths of the sulcus, to catch the end of the muscle, to catch the crest of the rectocele, and in a corresponding manner through the opposite side in such a way as when tied to bring together the ends of the muscle. So much tissue is included that the action of the suture is uncertain.

Dr. Baldy: Nr. Noble speaks of *skin;* to what skin does he refer?

Dr. Noble: I speak of the labia minora.

Dr. Baldy: That is not skin; it is altogether mucous membrane, and at any rate the crown stitch of Emmet does not go through the labia minora if the operation be properly performed.

Dr. Noble: I have seen Dr. Emmet do the operation; I was taught the operation by Dr. Kelly and have done it myself many, many times, and I call the part where the crown stitch enters skin.

Dr. Baldy: May I ask Dr. Noble what is the caruncula myrtiformis?

Dr. Noble: It is supposed to be the hymen crushed by labor.

Dr. Baldy: Is there not between the true hymen and labia minora a considerable area of mucous membrane? It is in this area that the crown stitch should enter. It is distinctly mucous membrane, and any one entering the suture in *skin* does not understand the operation.

Dr. Noble: You mean the inner surfaces of the labia minora.

Dr. Baldy: I do not. I distinctly disagree with this understanding of the Emmet operation. If the labia minora is folded down it will close the vulvo-vaginal gland, a fault which Dr. Noble says happens to himself. It is precisely for this and similar faulty understandings that the operation is unsatisfactory in many hands.

Dr. Noble: I am sure if the gentlemen do the operation in the new way outlined by myself they will find it is not like the old method and offers many points of advantage.

Dr. Norris said he brought these muscles together with the crown stitch. I do not hesitate to say that is impossible. While the Doctor thought he did it, it was done only in an approximate way. In spite of all that has been said about the tip of mucous membrane, I have seen the operation done at least twenty times by good men, including Dr. Baldy, and each one brought the tip down into the labia.

What Dr. Shoemaker has said I think covered this matter very well. Some years ago Dr. Shoemaker saw me operate and told me that I did not know how to do Emmet's operation, and now, having worked a little further away from the original Emmet operation, we have what is presented to-night.

About this question of atrophy of the muscles. Dr. Baldy says that a few years after a laceration the muscles atrophy, but he has never split the fascia and inspected them. If he will split the fascia and look for them he will find they are not atrophied. The reason they are not atrophied is because they have been used. Because the original attachment is torn loose the muscle does not cease its function, but it does it in an imperfect way. A great deal of this operation, whether the Emmet operation or this modification, consists in re-attaching the levator to the sides of the vagina and of the rectum, and the final part is merely the attaching of some fibres of it in front of the rectum. That anatomical point I wish to bring out very forcibly.

The next point is shortening the vagina. I cannot understand how claim can be made that the Emmet operation will not shorten the vagina. The reason it must shorten the vagina is that you catch

the vaginal wall at a point that when traction is made upon it it will come up to the urethra. Emmet makes a point of this. This point is half an inch above that which lies normally under the urethra. As the part caught becomes the tip of undenuded vaginal mucous membrane, and this is sewed to the vulva, I maintain that you shorten the posterior wall half an inch. That is wherein the other operation does not shorten the vagina. You leave the tissue where it belongs and do not sew it to the vulva.

About what Dr. Baldy said concerning cutting good tissue away. That I do not do. I laid special stress in my paper that the fascia is split with scissors to expose the muscle. I agree with Dr. Baldy that if you cut it all away it would be bad surgery.

Finally, the Emmet operation, in my opinion, absolutely prevents any muscular tissue being in front of the rectum. Why does it do so? You have an undenuded strip in the posterior vaginal wall. You sew the end of that strip to the vulva; your crown stitch pulls it there; you sew it right down to the hymen. Therefore on the posterior wall there is absolutely nothing but the mucous membrane of the vagina and the rectum. Hence I say that the Emmet operation absolutely prevents restoration of the parts to their anatomical condition.

There was very much that Dr. Baldy has said about pulling too much muscle in front of the rectum that I agree with heartily. I pointed out in the paper that it would be very easy to drag too much muscle together. It is only desired to bring the torn ends or the anterior border of the muscle together.

In conclusion, I am very glad that the paper has elicited a good discussion, because every man who has done many of these operations knows what an important thing it is to do a good perineal operation. As to the practical outcome of this work, my experience has been that the results are eminently good. I only remember two cases where the result of the operation was spoiled by infection and suppuration, and the number in which results were poor were not above one or two. The results have been certainly always as good as any operation with which I am familiar.

Persistent Nausea and Vomiting of Pregnancy, with Report of Cases.

By Edward P. Davis, M.D.

(See page 449.)

Discussion.

Dr. Norris: I was very much interested in Dr. Davis' paper, which has treated the subject most thoroughly. I agree with him

as to the great desirability of terminating pregnancy before it is too late. I have seen some five or six cases during the last few years. One case, seen with Dr. F. W. Packard, in which I terminated pregnancy, I especially remember. I felt that the patient would die certainly without and perhaps in spite of the operation of inducing abortion. I was very much impressed by this patient with the condition of the tongue and her general appearance, which was that of a typhoid condition. When we find a patient in that condition, with a feeble heart whose first or muscle sound is weak, with a dry, brown tongue, and with great emaciation, as pointed out by Dr. Davis, the chances are that even termination of pregnancy may not save the patient. It is unquestionably the duty of the physician to make an early and careful pelvic examination, and to inspect the cervix through a speculum. In three cases of vomiting so persistent that it was necessary to keep the patients in bed, the uterus in each case was normal in position, but the cervix was very congested and a purulent discharge flowed from the cervical canal. I have cleaned the cervix out repeatedly with peroxide of hydrogen, have relieved constipation by laxatives, and have cautiously nourished the patient with predigested liquid food, or by means of nutritive enemata, until she had passed beyond the danger line. It requires, however, the best of judgment and the most careful treatment to temporize with these grave cases, and I agree with Dr. Davis that such cases must always be studied critically. The man who is busy with general practice has neither the time nor inclination to critically study a case of this kind. He is not in a position usually to study the chemical and microscopical characters of the material vomited and of the urine, and thus to learn whether or not there is a grave toxemia which will not justify the time required to routinely try the large number of drugs recommended for this disease. When it has been determined to terminate pregnancy it seems to me it should be done at one sitting. It has been my experience that if we dilate the cervix, use a tampon and wait for Nature to expel the ovum, perhaps even forty-eight hours will make a difference in the result, bringing failure instead of success. By the time one makes up one's mind that pregnancy must be terminated the woman is critically ill, and the sooner pregnancy is terminated the better. I have found that exaggerated vomiting in pregnant women is so frequently due to irritability of the nervous system that my first prescription is for the bromides and chloral. In every case where the vomiting has gone beyond the physiological limit it is my routine practice to make a pelvic examination, to look especially for uterine displacements, then for congestion or inflammation of the cervix, and in the absence of symp-

toms of this kind to study the woman's nervous system with especial care to detect the presence of toxemia. The extreme emaciation, profound blood alteration and great depression which characterize these patients indicate that there is some grave disorder of the nervous system, and I think that some light will be thrown on these grave cases by critical autopsies. It was my misfortune not to secure an autopsy in one case that died after terminating pregnancy. I have induced labor in four or five others with success. It is only by prompt action that we can save such grave cases.

Dr. NOBLE: My experience with the pernicious vomiting of pregnancy has been very limited. I have never seen but one patient that died as a result of this complication of pregnancy; and this one died after the induction of labor, so that so far as my own experience goes it is not worth very much.

I think, however, that in managing cases that reach this stage, good judgment and careful treatment prevent a goodly number from passing over the danger line, but aside from that I must agree entirely with the spirit of the paper, which I think is eminently judicious and well worthy of the careful consideration of all of us.

Dr. EDWARD P. DAVIS: I recognize fully the fact that a congested condition of the cervix may contribute to the causation of persistent nausea and vomiting. That point was not dwelt upon by me. The paper has, of course, made no attempt at all to cover the entire pathology of the affection, but to emphasize certain points that these selected cases have brought out, and as such I am glad to find that it has interested the society.

Dr. C. P. NOBLE: Every abdominal surgeon who has operated for some years has passed through the period of draining. I remember there was a time when I drained ninety per cent. of all the cases I operated on. This dropped steadily, until this year it was a little over one per cent. How will we deal with cases that we know are bad cases? The last section I did I tried a method which is based on recent experimental work. Definite experiments have been made as to how to get the peritoneum to take care of infection, and it has been demonstrated mathematically that with a given dose of infection you could either have a peritonitis or not have it, depending upon how much the infection is diluted and how widely the infection is spread over the peritoneal surface. If you have your peritoneum infected, if you dilute it by filling the abdomen full of saline solution and elevate the pelvis of the patient so that it will be distributed throughout the abdomen—up to the liver and diaphragm—the chances are that the peritonitis will be prevented.

This is diametrically opposed to what we have been doing. Here-

tofore we have endeavored to confine infection to the pelvis. The last case I operated on was one of papillary cancer of the ovaries with cystic tumors. One was ruptured, and the mucilaginous contents were smeared all over the abdominal viscera, and there were various secondary papillary growths over the bladder and bowels. Of course this material cannot be washed out perfectly. I thought I would try this method in this case. We had to deal with a lot of material which was attached to the peritoneum. I washed out the peritoneal cavity as well as possible, then filled it with saline solution and sewed up the abdomen. The patient went to bed with a pulse of 130; it soon dropped to 70 or 80; she had a certain amount of fever, a temperature of 101 degrees, with some nausea; otherwise did well and made a good recovery. This particular case only serves to bring in the subject, but I think it is a very interesting one, and one which it is well worth while for all of us to think about.

The idea is that with a definite amount of infectious germs in the peritoneal cavity, if you wash out as well as you can and then dilute the germs and scatter them all over the peritoneal cavity, that the healthy peritoneum will be very much better able to take care of them than if we leave them all down in the pelvis.

Dr. J. M. Baldy: I have been very much interested in this subject, and will ask the secretary to list me for a paper on it for the next meeting of this society.

Frank W. Talley, *Secretary.*

Official Transactions.

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, January 12, 1897.

Paul F. Mundé, M.D., in the Chair.

Shock following Obstetrical Operations.

By Henry C. Coe, M.D.

(See page 441.)

Discussion.

Dr. A. P. Dudley: There are some points on which I would like to give my ideas, because I have not met with the disastrous results that Dr. Coe has come in contact with. I believe that a good deal of the ill-fortune that attends such cases is due to the

amount of manipulation and force that is used by the family physician before he calls a consultation of any kind ; and the patient is in a much worse condition for the consultant to work upon than she would have been if she had had no physician. And then comes in the question of what it is best to do when the consultant arrives. The doctor has stated that it is difficult to do a Cæsarean or a Poro in private practice. At the present time most of the special surgeons are so equipped, either by hospital appointment or by their own private preparations, that they can in the course of two hours get ready to do either of these operations with equally as much safety to the patient as they can then and there on the spot undertake to do aversion, and deliver the child safely, or do a craniotomy, removing the child in portions and subjecting the mother to the dangers that follow such an operation after she has been abused in efforts to deliver the child before the consultant is called in. If we let that woman rest for two hours, giving her some stimulant, providing she is not bleeding, and stimulate the child if possible, or quiet her pains, if there is a titanic condition of the uterus, until one can go to the hospital, I believe we will be just as liable to save the patient and the life of the child as we will be to save the life of the mother after the child is dead by making craniotomy. I can illustrate that by two or three cases brought into the Harlem Hospital. A woman came into the hospital to be delivered. When she was brought in she had been torn from the vulva through the rectum up to the uterus, through the uterus into the cul-de-sac, and the child was still in the uterus. That was the result of force to deliver the child. The woman was quickly delivered by the house surgeon and put in bed. She lived for ten days, in spite of the fact that she was burnt with bichloride from the vulva to the uterus, and had a bichloride slough. She died of peritonitis. There was a case where the life of the woman was absolutely thrown away. Another case came in, was delivered of a child, but cut from the uterus through the high inferior vaginal wall, and the tissues torn from the pubic bone. I contend that in cases of that kind, if we allowed the woman to rest just as she was for two hours, and in that time summoned assistance and got some bichloride solution dressings, we could do Cæsarean section, even if we deliver a dead child, and subject the woman to less shock and danger of sepsis, providing the parts have not been torn badly in the efforts to deliver her, than we would if we made craniotomy and

dragged the child out. Another point with respect to the condition of the heart, and I believe Dr. Coe is right when he says that the hæmorrhage into the pelvis, or into some part of the pelvic structures goes on, and the patient bleeds, the heart going on at a rapid rate, until finally it is tired out and it stops at once, when the patient is dead from hæmorrhage instead of shock. The case he speaks of to-day I could illustrate by report of cases I had. One case, delivered of her fifth child, the seventh pregnancy, having lost every one up to the time I delivered her of the fifth child, of full term, went on for fourteen days apparently all right. She got up and around the room, went across the room and sat down upon a couch, fell forward on the floor dead—dead in three minutes. We could find no evidence of any heart lesion before that, and she was the character of the woman that the doctor has described, fleshy Hebrew woman, had seven abortions, and this fifth full term child was the first she had delivered. The child was dead when delivered. I believe that the question is a grave one, and Dr. Coe has written up a subject that we have not given thought enough to, and we have not taught it in a proper way. I believe many women lose great quantities of blood that is not recognized. Not more than two months ago I had promised to attend a woman in labor, and she had been told by some old lady that she would have a few pains and go to sleep, and wake up and have a few more. The result was I was not called until the child was present. She had delivered alone, and a physician hastily called in. I put her in Sim's position and opened up the peritonæum, and here were both uterine arteries pumping and the vagina full of blood. I had great difficulty in saving that woman's life. The shock was tremendous; I had to use hypodermic stimulants. I agree with Dr. Coe implicitly, but I differ with him entirely in his method of treatment of these extreme cases he is called for. He has got to take the bull by the horns. Therefore, in those cases, I would say at once, I take the quickest route to success and take the chances of failure, and I would do the Cæsarean section and remove the dead child before I would do a craniotomy, and drag the child through the genital tract that had been injured by long-continued manipulation. I think there would be less shock. Give her chloroform, deliver the child, and sew the uterus up. You could see whether the uterus had been injured above its junction or not.

Dr. LANGSTAFF: In many of these cases of labor the general

practitioner does not make a full diagnosis of the position of the child's head, so that many cases turn out to be occiput posterior positions, which might have been corrected by an early recourse to being put in an occiput anterior position. The head gets jammed down into the pelvis, and it becomes as difficult as possible to deliver the child. I think the proper way to do in many of these cases would be to introduce the hand into the vagina, in order to make out the position of the fontanels. I think the general practitioner should be impressed with the importance of making an early examination, and not trusting so much to luck that things will go all right.

Dr. CLEMENT CLEVELAND : I find myself in sympathy with Dr. Coe entirely in all that he has said. I think that all of us who have had experience in cases of shock could have told beforehand, in each instance, the probability that shock would occur from any serious operation that might be performed. I know in my own case in operative surgery that I can almost always foretell when I am likely to have shock. When a strong healthy woman is to undergo a severe operation, I feel that she is likely to go through without shock provided it is not too prolonged. That has been my experience in women who are very strong, who have led a regular life, and have been well cared for, where there is not too much adipose, and where there is not a probability of fatty heart, that they go through usually without shock whatever. I have had experience in a few cases that will illustrate this point. As Dr. Coe was reading his paper I tried to call to mind several cases. I remember one, a strong Irish girl of twenty-three, to whom I was called several years ago, to find her in convulsions ; she had had already over twenty, the doctor said. She was five months advanced in pregnancy, and her physician had called me to see if I could make any suggestions. I, of course, told him the thing to do was to dilate the uterus and remove the fœtus, which I proceeded to do. It was very difficult, and with great effort I succeeded in getting my index finger into the cervix. I gradually dilated the uterus enough to remove the fœtus, and there certainly was a great deal of manipulation in getting my hand into the vagina, and it was consequently torn. The perinæum was, of course, at once repaired. That woman got entirely well and had no shock whatever, no appearance of it, and the convulsions, of course, ceased at once. Then another case I think of. I was called to a woman, it was very nearly the end of her term, a strong

healthy young woman. I was called a number of days before the end of full term, with the announcement that there was a premature rupture of membranes. I found the os undilated. I waited for pains; she became exhausted and tired, and I determined to help matters, and put her under chloroform and gradually dilated the uterus with my fingers, and found an occiput posterior. I had to use high forceps. I tore the cervix, and the perinæum was torn by the head and shoulders. I sewed up the cervix and the perinæum, and, in spite of all the manipulation, the woman did not suffer from shock and made a good recovery. I recall another case in which Dr. Broun helped me, a seven months' pregnancy, in a very delicate woman. I was fearful of her condition all the time. I was sent for for acute symptoms which developed. She had had morning sickness, but toward the beginning of the seventh month she began to suffer from vomiting during most of the day, and, in fact, could not retain anything upon her stomach. I called several in consultation, and we decided that she had some severe lesion of the stomach. Premature delivery was decided upon. She was put under ether, and I succeeded in dilating the uterus thoroughly and delivering her. I think there was not an excessive amount of blood lost. The child was dead, but the woman gradually grew worse, and sank from shock within two hours after the birth of the child. Here was a woman thoroughly exhausted from inanition, from want of food, and from the disease which she was apparently suffering from. I believe it was malignant disease of the pylorus. I could not secure an autopsy. Another case, one I expected to confine within a week. I was called unexpectedly. Dr. Coe was called early in the morning and found she had had a hæmorrhage. In the spring before she had a threatening of miscarriage that lasted about two days. Dr. Coe saw her at five o'clock in the morning, and sent for me. We consulted about the matter. She was then in a semi-collapsed condition, and we were afraid of internal hæmorrhage. We made up our minds that we must deliver her at once. She was put under chloroform by Dr. Bissell, and I commenced to dilate the cervix. I succeeded fairly well, got it pretty well dilated, and then put on forceps. I felt apprehensive about her all the time. We stopped the chloroform for a while, and let her come up, and then put her under ether. This patient was delivered with difficulty. The child was dead. The fœtal heart could be heard when Dr. Coe was first called, but neither he nor I could get it

afterward. She almost immediately went into collapse, and died an hour after delivery. This woman had never been thoroughly strong. She was a stout flabby woman. This was her third child. She had albuminuria with the first child. Her second pregnancy was without incident. I had, however, to deliver her by instruments. She did not take much exercise. Of her family none of the women are healthy. They have had children that are not well developed. Looking back to the other generation, the father and mother were not strong people. There is certainly an inherited dyscrasia in the women. I believe it is more in the women—their constitutional make-up—than in the methods we adopt that we should look for the cause of shock in rapid delivery.

Dr. N. G. Bozeman : I think that sepsis has a good deal to do with these cases ; it is not always shock ; but I think in a great many cases it might be overlooked. In one case, the woman I had seen some time before, in fact, I had to do an operation while she was four months pregnant ; but when she got in labor I was called, and I found that she was in a septic condition. I had to put on the forceps, and finally had to turn, but the manipulations were not so very long. Before we were through her condition was pretty good, but she had a high temperature, about 105°, before the operation, and I left thinking she would get on fairly well ; but shortly after that she died, about five or six hours afterward. I think it was simply due to sepsis, not to shock.

Dr. George H. Mallett : I thank Dr. Coe for having brought the subject before the Society. One point Dr. Coe has made is admirable, and that is the necessity for impressing upon the patients the importance of confinement, and by so doing they can be brought to make proper preparations for the ordeal that is to come. Now it is considered a comparatively easy matter, and they look upon it as a natural process and not very dangerous ; whereas in laparotomy it is considered a dangerous thing ; we can take our time and operate with ether, but with this operation we have so many disadvantages. I think the compensation should be increased. As to the point Dr. Cleveland made, I have always found it difficult to anticipate shock. The ones I have often thought would stand an operation best have shown more symptoms of shock. I think anæsthesia plays a very important part in the production of shock. In the cases related we do not know how long they were under the anæsthetic. It is shown oftentimes that the patient has profound shock when there is little or no

hæmorrhage, but there is a large amount of ether given, and they are kept under it for a long time.

Dr. Paul F. Mundé: It seems to me that the real question is as to what "shock" means. As I understand it, shock is a depression of the general nervous system, which induces heart-failure. This condition may be preceded by prolonged depressing agencies or circumstances, or it may be sudden. Shock is not loss of blood, but loss of blood may bring on shock. If the patient dies from loss of blood, the patient does not die from shock, except secondarily. There seems to be some misunderstanding in the discussion of the paper, and I think Dr. Coe has been rather vague on the two points himself. I have always been sceptical as to the occurrence of *true surgical shock* in a perfectly healthy, sound individual, as the result of any surgical manipulation. I admit that a person with a fatty or otherwise organically diseased heart, a woman with renal, chronic hepatic or chronic pulmonary disease will be much more likely to suffer from shock after prolonged manipulation than a perfectly healthy subject. I admit that a woman in labor who has been under anæsthesia for hours, whose heart-action has been weakened by the prolonged effect of the anæsthetic, who has lost more or less blood, often not appreciated in the course of the obstetric manipulations, lasting sometimes for several hours—I admit, I repeat, that such a woman naturally, after she is confined, when the conditions of the circulation change rapidly, owing to the sudden emptying of the uterus, may be subject to a depression of the nervous system, heart failure, and shock, which cause death. All that I will admit, but I must confess that I still am sceptical as to shock as the cause of death, except under the circumstances mentioned. I can just recall two instances of shock, one of which will illustrate one class of shock, and the other another; one class of shock which has been brought on by loss of blood, the other, which was, in my opinion, real true surgical shock. It seems to me that some of the cases of shock may be possibly due to the formation of a heart thrombus. It has occurred to me that that was the cause of several cases that I have seen suddenly topple over after confinement, where the women were exceedingly anæmic and the blood prone to coagulate. I saw such a case in the Maternity Hospital at Würzburg, Bavaria, nearly thirty years ago. One of the cases I referred to was that of a lady who had gone to the end of her eighth month, had lost some blood for several days previously, and on the morning of

her return from the country had a very severe hæmorrhage. She sent for her physician, who found the os open and labor advancing, and toward evening sent for me. On my arrival I found a very anæmic woman, otherwise in good condition, the os wide open, the head presenting, the placenta two thirds adherent, protruding into the cervical canal, membranes unruptured. Without an anæsthetic, on account of the anæmic condition of the patient, I turned the child and at once extracted it ; then putting my hand into the uterus I readily removed the placenta, and compressed the placental site ; there were not more than six ounces of blood lost in all, not as much as there would be in an ordinary confinement. The uterus contracted well, and absolutely not another drop of blood was lost. The patient was turned back into the bed, the foot of the bed elevated, and the uterus kept well compressed. The family physician and I went down-stairs and sat there talking for an hour or so afterward while the nurse was watching the patient. We had tea, and I was smoking a cigar, perfectly happy about the case, when the nurse called the doctor to come up. He had hardly been up a moment when he called for me. I came up and found her gasping. I immediately sent for my assistant and the infusion apparatus, and set to work to prepare a saline solution, but before I could get it ready she was dead. There was absolutely no bleeding. I think that woman died from shock, or if it was not shock, she died from heart thrombus or heart failure, but certainly she did not die from a postpartum loss of blood. I call that death from shock, but I think it was shock superinduced by the previous hæmorrhages. On the other hand, a real shock, or true surgical shock, when the patient dies from the heart failure from nerve depression produced by a sudden impulse upon the nervous system, is emphasized by a case I will now speak of, in which I killed an ectopic ovum by means of repeated shocks of the galvanic battery. I will admit that the diagnosis may be doubtful, but as I took the patient to Dr. Emmet, and he made the same diagnosis, and she presented all the signs of pregnancy, I do not think there is any doubt that the diagnosis was correct. This woman, after having been subjected to a succession of interrupted galvanic shocks, the full power of the battery being put on for from fifteen minutes to half an hour, went into a collapse so profound that for fully twenty-four hours she was absolutely pulseless at the wrist. She was pale, clammy, and I thought would die at any moment. I had two of

my assistants there all that time putting in stimulating hypodermics. I suppose that woman must have received a hundred hypodermics of one kind of stimulant or another in the twenty four hours before her pulse returned. That I call true shock. There was no sign of intraperitoneal hæmorrhage. I do not think that real true surgical shock occurs very often independently of the preparatory or producing causes which I have named, and which Dr. Coe has also mentioned, without some unrecognized internal hæmorrhage. It is not my purpose to talk of the prevention of shock, for we cannot foresee it in an otherwise healthy woman, nor to discuss its treatment, except to say that I should think that intravenous infusion of a saline solution would act as well as anything. I have had several cases very recently where I have used a saline solution, both in the hospital and in private practice, where the shock was also induced by hæmorrhage ; and I saw one case in my private hospital of a woman from whom I removed both appendages, who was very pale, anæmic, and mentally depressed. On the third day she had her bowels moved by three grains of calomel followed by Rochelle salts, and went at once into a profound shock, was pulseless and clammy, so that I thought she would die. I sent for the house surgeon of Mt. Sinai, and he infused her, and she rallied and made an excellent recovery. That was a case of true shock, nothing except apparently the effect of the movement of the bowels in a depressed woman.

Dr. Henry C. Coe : I agree with Dr. Dudley, and it seems to me very unfair that we are compelled to bear the onus of these cases when we are not entirely responsible, and that if anything goes wrong, all the blame is thrown on us. I do not know that we can help ourselves. It seems as if we ought to be allowed to state the conditions frankly to the family before we begin. I have tried more than once to follow the plan which Dr. Dudley mentions, but have found that unless you guarantee a live child the patient and her friends will not hear of an abdominal operation. Then in neglected cases there is always the doubt as to whether the patient is not already infected before the consultant is called. Certainly we are not yet in a position to urge in private practice Cæsarean section, or even symphyseotomy, as a substitute for embryotomy.

Dr. Dudley : Would not he under such circumstances be able to get the consent of the people, and do the Cæsarean section in ten or fifteen minutes rather than be an hour extracting a dead child ?

Dr. Coe : I would not care to do it in a private house at one or two o'clock in the morning.

Dr. Dudley : The doctor in the report of his cases reported a delivery occupying an hour and a fraction.

Dr. Coe : One cannot tell how long a time it will take.

Membranous Dysmenorrhœa.

By W. L. Dunning, M.D.

(See page 433.)

Discussion.

Dr. Mundé : These cases are exceedingly interesting and perplexing. Dr. Dunning is to be congratulated upon his success. I hope some of the gentlemen will be able to say something from their own experience in relation to the matter.

Dr. E. L. H. McGinnis : I am very glad to have heard the doctor's paper. The subject has interested me for a long time. There is not very much known about it, but it seems to be recognized that this membrane thrown off in this way, when it comes to be filled with menstrual blood certainly does act as a foreign body in the uterus. The pain, to my mind, is due to the efforts of the uterus to expel its contents. If there is little or no constriction at the point of the internal os, the pain, of course, is not so severe as when that condition of stenosis exists, and any means to overcome that stenosis will relieve the pain. That is the thing to be brought about. Of course, my own views in regard to electricity, especially in this, are pretty well known. I have been most fortunate in doing as the doctor did—viz., in using the negative galvanic at the internal os, with the idea of more or less freeing the way and to overcome any condition of spasm that may be lower down in the cervix. Sometimes that is exceedingly difficult to do, especially if the positive pole is tried primarily, and if the negative is used, while it will be exceedingly difficult to introduce at first, if it is partially introduced very gently by manipulation and the current turned on, the electrode presently will slip in almost of itself. I have had a little better luck with the faradic ; I think that it stimulates uterine contraction far better than the galvanic current. I also believe that it renews the healthy tone of the uterus, which may be flabby, or the circulation of which may be more or less interfered with by some slight degree of flexion or version. It is

my custom to use the faradic current. The doctor's method of using the galvanic negative has given very satisfactory results. I would ask what the doctor's idea was in following up the negative with the positive ; I should like to hear his reason for it when he closes the discussion.

Dr. Le Roy Broun : I had a case last summer. The patient I saw for the first time. She was apparently in excellent physical health, yet had a wonderfully nervous, distressed look in her face. I never saw a more nervous wreck. She was hysterical in the extreme, and could do nothing. On examining her, I found a small laceration of the cervix, a heavy uterus, and a submucous tear of the perinæum. She did not speak of passing any membrane. I curetted her well and repaired the cervix and perinæum. She came to me three months after and told me she was no better ; she had been relieved of her painful menstruation, but that she flowed as often and as long as before, extending to ten days, and continued to pass something like flesh at each monthly sickness. I questioned her closely, and asked her to bring the fleshy products of the menstruation to me next time. In due time she returned, bringing with her in three or four pieces the uterine endometrium much thickened. This was the first time her attention had been called to it. She told me she had been passing this membrane for five years, and had been curetted before for the menorrhagia. Since she had already been curetted, I used positive galvanism in the uterus. I only used twelve milliampères three times a week for eight minutes. The first time there was little improvement except a relief from some of her nervousness. At the end of the second month she passed no membrane, she flowed only four days instead of the former ten, and she came to see me a week ago and said she had not felt as well for five years. When I started with electricity I did not have any faith in it, and used it only as a last resort. She has entirely lost the anxious expression of face, she is not at all nervous, she is not hysterical, she can attend to her duties, she passes no membrane, but for reasons of her own she does not keep up the treatment which I would continue for two months more.

Dr. Mundé : It is true, in a paper which I wrote and published in 1885, on " Electricity in Gynæcology," will be found the report of a case of membranous dysmenorrhœa which I treated twenty years ago, where I cured the patient, after fully six months' persistent treatment, which consisted in curetting and repeated

applications of pure nitric acid to the whole endometrium, then operating on a large laceration of the cervix in order to reduce the size of the uterus, and finally in intra-uterine negative galvanism for a period of two or three months. It was before the time of the milliampère metre, and I used the current according to the sensations of the patient. Finally the membranes disappeared, and they stayed away; at least, I met the lady on a Madison Avenue car about a year ago, and she told me she had been perfectly well all that time; therefore I know I cured her. I used the negative electrode in the uterus chiefly because I wanted not so much to overcome the spasms that Dr. McGinnis speaks of, as to bring about partly a caustic and partly an alterative effect upon the uterine mucous membrane, so as to induce a healthy tone. Whether that did any good or not I do not know. I am happy to say that from my experience cases of membranous dysmenorrhœa are not common. I often hear of shreds that are passed and are brought to me in bottles, and that are undoubtedly portions of the mucous membrane, but complete casts are not, in my opinion, common. I do not agree with Dr. McGinnis that overcoming a spasm is the main thing; it is the removal of the cause of the membrane which I think the most important factor in such cases.

Dr. DUNNING: I agree with Dr. Mundé in the method in which this electricity acts—namely, by improvement in the general nutrition of the patient, both locally and constitutionally. The negative pole was used first in the belief that it attracted the blood toward the uterus, and that would promote the nutrition locally; but the patient complained of cramps following it, and believing that the positive pole was more sedative in its effect experimentally, I changed the current to the positive for five minutes later, and in this case seemed to be with happy results. That was the only reason of the change.

Two Cases of Nephrectomy.

Dr. MUNDÉ: I have done two operations for displaced kidney, in which the kidney was found in the pelvic cavity, and the diagnosis was not made until I had opened the abdomen in the median line, and found what I supposed to be an adherent ovarian tumor, but which, on being peeled out, proved to be a kidney. On both occasions I removed the kidney, I am happy to say, successfully. The third one I removed in a woman from whom I had previously removed the uterus and appendages for a large fibroid. There-

fore I knew that the tumor present on the left side had nothing to do with the pelvic organs. I made an incision through the abdominal wall, pushed aside the depending colon, split the peritonæum, and enucleated the kidney, which proved to be a large sarcoma. The woman recovered, but eventually died from a recurrence in the lungs.

About a year ago a patient came to my office who had a large abdominal tumor on the right side, the nature of which was doubtful. It was apparently not connected with the pelvic cavity, and was more or less hard. It projected apparently up toward the diaphragm and under the right border of the ribs. At that time I was doubtful about it, and made a general diagnosis of tumor of the liver, or kidney, or perhaps an ovarian tumor which had migrated up there (as I have had one such on the left side), or malignant disease of the intestine or omentum. I advised exploratative incision, but heard nothing more of the case until she turned up three weeks ago. I looked at my book and found a diagram of the tumor, which I then found on examination was about the same as it was a year before ; it had not increased. The patient complained of a good deal of pain and burning from the tumor, and insisted on being operated upon. I was now able to differentiate the tumor from the liver, and decided it to be a tumor of the right kidney. I made a lumbar incision, and removed the tumor which you see here. It was so friable that I had to pass both hands under it and lift it out after having peeled it loose all around. You can see from the size of the tumor (larger than an adult head) how large the cavity was that was left behind. The peritoneal cavity was accidentally opened, but at once closed with catgut suture, and the whole cavity packed with iodoform and sterilized gauze. The patient is doing perfectly well with the exception that she has now, from having been catheterized, developed a subacute cystitis. The pathologist reports this to be an angio-myxo-sarcoma with a large amount of adipose tissue, the malignant part being close to the kidney, and he says that Ziegler, a well-known pathologist, says that such tumors of kidney do occur, but are rare.

The other specimen is rather a more complicated one. The patient came to the hospital about two months ago, with a history of having lost blood for several weeks and having profuse pelvic pain. She had no history of recent pregnancy or of having missed a menstrual period, and merely came for pain and irregular flow-

ing. An examination showed a tense elastic mass behind the cervix, which was aspirated and dark blood withdrawn. It was, therefore, pronounced to be a pelvic hematocele, and I operated by the method I have employed for fifteen years—making a free incision behind the cervix, spreading the blades of the scissors and introducing a two-branched dilator until I could insert two fingers easily. I then cleared out the clots, which were quite extensive in amount, and on the right side I found a tumor which was firmly adherent, which I at first took to be a blood clot, but on trying to peel it loose I found that I was mistaken. By means of two fingers of my left hand I easily succeeded in getting under the tumor and enucleating it, and removed it by drawing it out through the opening with the forceps. On inspecting it I found that it presented the external appearances of an ovary; it was filled with coagulated blood. On one side was evidently the stump of the Fallopian tube, and the nature of the specimen was made perfectly clear by a Morgagni's cyst, which was attached as usual near the fimbriated extremity of the tube. It appeared to be a ruptured tubo-ovarian pregnancy. At the same time out rolled with this mass a small tube about three inches long, which we first took to be the Fallopian tube. Our attention was attracted at the same time by another body which rolled out of the vagina, which was evidently the appendix vermiformis. It was perfectly healthy, but was seven and a half inches long. As there was no use in putting it back, I told the house surgeon to ligate and remove it. How it got there remained to be explained later on. I packed the cavity with iodoform gauze, and at the end of a week I was informed that the patient was leaking urine through the vaginal wound. An examination showed that the bladder was not injured, and that the leak must come from the right ureter. Under an anæsthetic the right ureter was probed, and both the house surgeon and myself succeeded in getting into the ureter for a depth of two inches, but it was impossible to enter deeper. The patient was at the same time passing urine from the bladder regularly, but only about sixteen ounces in twenty-four hours, the rest dribbling away from the vagina. The pathologist reported that the small tube which came away with the tumor was three inches of the ureter, the other being the appendix vermiformis. The only explanation that I have to make is that the entire appendix was down in Douglas's pouch some time before; that the woman had a tubo-ovarian pregnancy, which ruptured and produced a pelvic

hematocele. This cavity was closed up above by adhesions, and the appendix vermiformis being down in the cavity, and having been there before, naturally prolapsed into the vagina when the hematocele was opened. The tubo-ovarian sac became adherent by inflammatory process to the right side of Douglas's pouch, and was so firmly adherent that when I peeled it loose I unintentionally tore off three inches of the ureter, which was firmly attached to the outer surface of the peritonæum by adhesions. I do not understand how I did it, for I used no special force, but the fact that it was done is perfectly clear. I have never had a case occur to me in any of my abdominal or pelvic work in which the ureter was in the least injured. The leaking continued from the wound ; so after considering the case throughly, I decided that there were several courses open to me : one was to let the case alone and allow the woman to keep her fistula ; but that would not be surgical ; the second was to bring together the two ends of the ureter, and thus restore its continuity, but that would involve a very large wound, and with the loss of three inches of the ureter would probably not succeed. Besides, the ureter, which had been torn, was so exceedingly small that there was probably some previous contraction of the ureter, making it very much worse for the implantation of the two ends. The third was to sew the upper end of the ureter into the bladder, but this would probably fail, owing to the shortness of that portion. The last course was to remove the right kidney. Before doing so it was necessary to assure ourselves that the left kidney was sound by measuring and testing the urine from that kidney. In order to do this Kelly's catheter was inserted into the left ureter and left there for twenty-four hours. The urine was found perfectly normal, and eighteen ounces in amount. Therefore, after having put the case before the patient and her husband, and having received their consent, I removed, last Wednesday, the kidney which I show you here. It is healthy, as you see. It is a very long kidney, and it required a great deal of trouble to get it out, but the patient is making a good recovery, and the wound is almost closed.

Official Transactions.

G. H. Mallett, *Secretary.*

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REMARKS ON DRAINAGE FOLLOWING ABDOMINAL SECTION.*

By J. M. Baldy, M.D., Philadelphia.

It appears to me that no exaggeration is made when the statement is advanced that the tendency of the day in surgery is to as much as possible eliminate drainage, and that experience is daily proving that this procedure is less and less necessary in abdominal surgery. Ideal surgery is that surgery which permits the surgeon to close tightly all wounds in such a manner that there will be need of no after-treatment or dressing. The nearer one can approach this desideratum the nearer he approaches perfect surgery, and any tendency which leads one away from the accomplishment of this is faulty, and is to be tolerated only as a necessary evil. Such is drainage—it is a necessary evil in abdominal surgery, and becomes the more necessary in proportion to the lack of skill or judgment brought to the case by the individual surgeon. It is a notorious fact that there are surgeons of equal skill, working with the same facilities and on the same class of cases, and yet one will use drainage in from 50 to 75 per cent. or more of his cases while his neighbor will be using it in only from 5 to 10 per cent. or even less. The question naturally arises, what is the difference in results as between two such men? One would naturally imagine a comparison in such a case would quickly settle the matter pro or con. It is just such comparisons which are rapidly crystallizing surgical sentiment against drainage, excepting in exceptional cases. Compare, for instance, the work of any ten recognized leaders in abdominal surgery in Philadelphia, the one using drainage freely and the other practically not using it at all—there are several such examples open for comparison in this city. What is the result? As far as mortality is

* Read before the Philadelphia Obstetrical Society, March 4, 1897.

concerned, especially in the case of septic deaths, the advantage lies rather with non-drainage. But lest there be any dispute or quibble on that point, let us say, for the sake of the argument, that there is no difference, the range of mortality is about equal. This, I think, no one who is at all cognizant of the facts as they stand to-day, will venture to gainsay, otherwise I can assure him he is woefully lacking as to the true, plain facts which are within his reach any time he may take the trouble to investigate them. Granting then that the mortality is equal, is not the question settled most emphatically against drainage as a routine practice? He who has run the gauntlet of caring for a drainage tube or caring for and removing a gauze drain will in the majority of instances accept it as a thing of the past. He who has seen fistula after fistula follow its use will breathe a sigh of relief. He who has felt with a certain degree of uneasiness that a large portion of his resulting wound hernias have been due to the drainage tube will gladly in future dispense with its use.

Drainage has been so strongly and systematically preached during the past decade that in abdominal surgery it has taken deep root, and will no doubt be hard to eliminate from one's work. I can well remember with what trepidation I closed wounds and returned patients to bed when I became convinced that I was using drainage with unnecessary frequency and determined to make the effort to in part at least eliminate it from my practice; how, as I advanced, my confidence became greater and greater until to-day it is the exceptional case I drain—certainly not more than 5 per cent. My working rule has become, "when in doubt do not drain." The result has been that since I have practically ceased to drain I have not seen a fistula occur nor do I know of but one or two hernias during the past three years' work. The relief from the care of and anxiety over the tube has been simply immense—so great in fact, that the circumstances would have to be exceptionally strong which would force me back to the old practice. The free suturing of all wounds with catgut, and thus rendering all traumatisms extra peritoneal and at the same time getting rid of oozing to as great an extent as possible has helped to eliminate the necessity of drainage. The adoption of the Trendelenburg position in operating has not merely facilitated this but has rendered it possible in cases where it otherwise would not have been so. Even with a considerable amount of oozing no fear need be entertained, as not only practice but experimentation has amply proven the ability of the peritoneum to care for and dispose of a very considerable amount of fluids as well as solids.

Drainage, like the clamp in ovarian cysts and the *serre-nœud* in

hysterectomy for fibroid tumors has been in the evolution of abdominal surgery a necessary evil—an evil which like the others, has in great part ceased to exist. We cannot entirely dispense with drainage, but he who drains over 5 or 10 per cent. of his cases takes unnecessary trouble and risk and in future will probably see this percentage lowered.

It will probably, and with justice, be demanded that my results be given in view of my emphatic and radical departure from the practice of the past. As an encouragement for those who are disposed to rid themselves of the evils and annoyances of drainage, I may state that since resuming my work last September after the summer's vacation (a period of six months), I have drained but three times, twice with gauze and once with glass. In two of these cases I should again drain had I to do over. One was in the case of an acute puerperal pelvic abscess in a moribund woman—abscess opened, emptied, washed out and drained. The other case was one of old, longstanding double ovarian abscesses and pyosalpinx with a long-standing bowel fistula and periodic discharges of pus from the rectum. This case was drained with gauze as a precaution lest the closure of the bowel opening should not prove secure. The precaution was well taken, as a temporary fecal fistula formed. The third case drained was a doubtful retroperitoneal condition. At the time it was considered to be possibly malignant. Drainage was a mistake in this case, and would not be repeated had I the operation to again perform. In the six months' work there was but one death, in either private or hospital work, all classes of abdominal surgery being included—that death being in the case of the acute puerperal patient already quoted, and which was drained. There has not been a single non-drainage death in this time.

This record is my answer to any one criticising my remarks on drainage. It appears to my own mind at least to fully justify what I have had to say on this subject, and my hope and object in publishing it is that it may be of encouragement to others who may be disposed to follow in my footsteps as I have followed in the footsteps of others.

SELECTION OF OPERATION IN CASES OF CANCER OF THE CERVIX UTERI AND OF THE UTERUS ALSO.*

By J. E. Janvrin, M.D.

Gynæcologist to the New York Skin and Cancer Hospital.

In a paper read before the New York County Medical Association, just a year ago, upon the "Ultimate Results in my own experience of Vaginal Hysterectomy for Cancer, Originating in the Cervix Uteri," I gave my results in cases coming under the title of this paper. There were twelve cases in all, and out of that number four had remained well after periods varying from twelve years down to three years and four months. Since that date I have seen and examined two of these cases (and they are the two of most recent date), and I have found them free from any return of the disease. These four recoveries and exemption from recurrence after such a length of time gave a percentage of cures amounting to thirty-three and a third per cent. in the limited number of twelve. In that paper I mentioned four other cases of the same type, in which the same operation had been done at periods varying from two years down to five months, and stated that there had been no evidence of return in three of these cases. In one operated upon five months previously I believe the disease was about redeveloping in the cicatrix. I can simply state to-night that the first case of these four, now at the end of three years, continues perfectly well. So, too, are two out of the three operated upon now a year and five months since. The other, in which I suspected a recurrence, I have not seen for nearly a year. Her physician wrote me, some two months since, that "he believed the disease was redeveloping, but that the patient was in fairly good health, and had suffered comparatively little pain since the uterus and adnexa had been removed."

These remarks are simply preliminary to the general paper, but they seem to me of sufficient importance to warrant their insertion here, particularly as they bear upon the selection of the most appropriate operation in cases affecting the cervix from the start. I am aware that it is the general opinion of surgeons who see a good deal of this disease that the instances in which the disease begins in the cervix are those in which, as a rule, the least hope is to be expected in the way of ultimate cure, particularly if the operation resorted to is simply *vaginal* hysterectomy. From the literature of the subject,

* Read before the New York Obstetrical Society, February 16, 1897.

as far as I have read it, I am inclined to think that such is, generally speaking, the case; aud furthermore, that the truthfulness of this statement can possibly be readily accounted for from the fact that up to the last two years (or about that date) many cases of cancer of the cervix were operated upon by this method, which should have been treated by the combined abdominal and vaginal extirpation, or better still, never have been subjected to any attempt at a radical operation.

In selecting for vaginal hysterectomy a case of cancer of the cervix or one in which the disease may also have extended to the upper portion of the vagina, I believe the first points to investigate are these: Is the disease confined to the cervix? Is it confined to the cervix, and in addition, *only* to the mucous lining of the very upper part of the vagina? Is it confined to the cervix, the mucous membrane of a small portion of the vagina, and additionally, to the endometrium? Does the examination convince the surgeon, as far as any examination prior to the operation can convince one, that the disease has not progressed beyond the three points mentioned? I do not mean to say that it is possible in every case to make out a *perfectly* clean map as to the extent of the disease, but I do mean to say that in the vast majority of such cases it can be done. A thorough examination will generally show the uterus perfectly movable, no evidence of infiltration into the glandular or cellular tissue *immediately* surrounding the cervix towards the pelvic bones upon the sides, no infiltration *under* the mucous surface of the vagina, and probably no nodular enlargements in the uterine body. There will be no enlargement of the vaginal glands, and nothing in the general appearance of the patient indicating cachexia. Such cases are typical of carcinoma or epithelioma beginning in the cervix, and fortunately seen in their early stage, and such cases operated at once by vaginal hysterectomy, will yield the most gratifying results.

Should it be apparent in examining a case of this class that the disease has progressed outward from the cervix, and that infiltration of the cellular or glandular structures in that direction already exists, the question comes up at once, What operation had best be done, if *any* operation is to be resorted to? To my mind, there are two methods open: First, the combined abdominal and vaginal extirpation, for by this means we can see what we are doing, and can make the most radical section with less danger to the surrounding tissues (ureters, bladder and rectum). Secondly, the operation so thoroughly done and so consistently urged by our distinguished fellow-member, Dr. Byrne, viz., the thorough supra-vaginal amputation by the galvano cautery. My experience with the latter opera-

tion has been so limited that I am not competent to offer any remarks that would weigh either for or against it. The very carefully-prepared statistical papers read by Dr. Byrne during the past four years before the American Gynæcological Association show exceptionally satisfactory results in operations performed by him, and are extremely telling arguments in favor of his operation. On the other hand, most excellent results have recently been reported by other operators who have resorted to the combined abdominal and vaginal method. Only a careful collection of the cases operated upon fully three years ago by all surgeons who have been working in this line can throw any definite light upon the question. Such definite data are not forthcoming at the present time. In my own limited experience in the operation of high amputation and cauterization, either by the galvano-cautery or by the Paquelin cautery after the high amputation had been done by scissors—only seven cases in all—I find one in which the operation was done in June, 1891, and after three years there had been no recurrence. In four others, dating from 1884 to 1887, the disease returned and the patients died within two years at varying periods. Two other cases, of January, 1889, and June, 1890, respectively, passed out of my sight after six months. This, of course, is a very limited number, and simply shows that my preference has generally been to resort to hysterectomy. (It must be remembered that all the cases of which I am giving the results to-night, whether high amputation and cauterization or hysterectomy, either abdominal or vaginal or combined, occurred prior to three years ago.)

Of the *combined* operation, abdomino-vaginal hysterectomy, for cancer of the cervix and body, I have but one case to report as *cured*, i. e., passed beyond the three-years' limit. That case occurred in May, 1890, and it is my only case of that operation done prior to January, 1894. In this case this operation was selected on account of the rather large size of the uterus.

In this connection, I will give the ultimate results in four cases of abdominal hysterectomy for carcinoma of the body of the uterus (all of them large bodies). One done in June, 1893, no recurrence at the end of three years; one done in May, 1890, recurrence within a year. *Two* died as a direct result of the operation (one of them from shock and the other from shock and sepsis.)

During the past three years nearly all of my operations have been done per vaginam, and I believe that all of the patients are living and, as far as I know, are, with one exception, free from recurrence. It might seem that this statement is something of an exaggeration, but if we look into the matter a little more thoroughly the

reason for it will readily be seen. It consists in selecting for vaginal hysterectomy those cases in which the disease is a local affair, and therefore cases in which constitutional infection has not begun. A very large percentage of cases, as they come to me, are of this character, notably those of epithelioma of the cervix in its early stage; epithelioma of the cervix associated with a beginning of the same same condition of the mucous lining of the upper portion of the vagina; cases of epithelioma, adenoma, or carcinoma of the endometrium of recent origin. In all of the foregoing cases I think a vaginal hysterectomy holds out as good a prospect of ultimate cure as any other operation. Per contra, for all cases in which there is good reason to suppose that the infection has gone beyond these points, cases of extension into the cellular and glandular tissues around the sides of the cervix, the so-called pavametrium, to a limited extent even, of extension from the endometrium through the uterine body, as evidenced by enlargement of that organ by nodules, fixation of the uterus with thickening around it in the broad ligaments, especially if with these conditions we find more or less constitutional symptoms, the operation which promises the best results is undoubtedly a combined abdominal and vaginal hysterectomy. (I use the term "combined abdominal and vaginal" as the best to my mind to express a *total* ablation of uterus and adnexa, together with the greater part of the broad ligaments.)

There are many cases, however, of the class last described, in which the question will arise as to whether even this latter operation is absolutely justifiable. In such the question of the age of the patient and heredity especially should be carefully considered. Although pre-disposition to cancer does not fill as important a rôle as it was formerly considered to do, still in these cases in which the propriety of a radical operation is sometimes questionable it forms one of the factors to be taken into consideration. As to age, I believe that, other things being equal, it is more justifiable to do an abdominal or an abdomino-vaginal hysterectomy in patients who have not passed the climacteric than in those who have. Possibly this is somewhat of an arbitrary distinction. Nevertheless I feel convinced that prior to the menopause the monthly congestion of the uterus has a decided tendency to promote the growth of the malignant disease, and for that reason, if for no other, the operation would seem more justifiable, in these instances of doubtful propriety of resort to a radical operation.

In a paper bearing the title, "The Limitations for Vaginal Hysterectomy in Malignant Diseases of the Uterus," which I read at the eighth annual meeting of the Fifth District Branch of the New

York Medical Association in Brooklyn, May 24, 1892, and which was published in the *New York Medical Record*, July 9, 1892, I spoke of certain cases in which the disease had extended from the cervix downward upon the mucous membrane of the vagina, and in urging vaginal hysterectomy under such circumstances, said: "In such cases an examination will show an extension of the disease to the mucous membrane *only*, the vaginal wall slightly, if at all, thickened, and no cancerous infiltration whatever *under* the wall. This condition does not in any way contraindicate the operation. It simply complicates it by necessitating the removal of that portion of the vaginal wall upon which the disease has started, together with half an inch or more of the healthy tissue below."

I have had four such instances up to the present time. No. 1 nearly eight years since, No. 2 five years since, and No. 3 four years and four months since. These three are all well at the present time. No. 4, operated upon a year ago last September, has already been referred to as having recurrence, but is still living in a comparatively comfortable state.

In an article by Dr. W. W. Russell, of the Johns Hopkins Hospital, in the December (1896) number of the *American Journal of Obstetrics*, there is an excellent description, accompanied by plates, showing the distribution of the lymph vessels and the glands in the female pelvis. The first group of vessels, starting from the cervix, has its first group of glands located in the parametrium, *below* the broad ligament, not in it, and another group near the iliac vessels at their dividing point. The second group of vessels, going from the body and fundus, pass in two large vessels upward through the broad ligament, and have their first group of glands just below the kidneys, in front of and partly surrounding the aortic vessels. The third group of vessels originate in the horns of the uterus, and pass out to the vaginal glands, anastomozing, on either side of the uterus, with the group of vessels from the cervix. This arrangement of the lymph vessels and glands, so accurately described by Dr. Russell, has to my mind a very strong clinical aspect, especially on the selection of the operation most appropriate to each individual case, or in rejecting all radical operation whatever.

CONCLUSIONS.

1. Vaginal hysterectomy should be confined to cases in which the disease is limited to the cervix, or the cervix and mucous membrane *only* of upper part of vagina, or to those in which the disease, having involved these points, has also begun to develop upon the

mucous lining of the uterus itself. To this may be added cases of adenoma and carcinoma uteri in their early stages.

2. What class of cases of cancer of the cervix are best treated by incision by the galvano-cautery, will be better discussed by Dr. Byrne than by myself, for, as stated in the earlier part of this paper, my experience in this line of treatment has been very limited.

3. In all cases in which there is suspicion of extension of the disease beyond the limits previously mentioned, whether into the parametrium, the folds of the broad ligaments, the ovaries or the cul-de-sac, the combined abdomino-vaginal operation is by all means the most appropriate, if we resort to any radical operation. Whether the operation described by Dr. Clark, of the Johns Hopkins Hospital, or that of Dr. Polk or Dr. Pryor, as described by each of these gentlemen within the past year, is to be made use of is in my own opinion simply at matter of personal election. Either one is as radical as we could wish.

SAPRÆMIA RESULTING FROM THE PRESENCE OF A DERMOID CYST.*

By E. E. Montgomery, M.D., Philadelphia.

On the evening of February 1, 1897, I saw, in consultation with Dr. W. H. Teller, a lady who had four days previously undergone her eighth confinement. The labor had been completed, after some difficulty, with forceps. Her condition had been fair until the morning of the fourth day, when she had a chill and an elevation of temperature reaching near 104° F. The uterus had been curetted but without result. She was in a chill when I saw her. She looked very anæmic and the pulse was frequent. The napkin was saturated with bloody fluid. Vaginal examination disclosed a badly lacerated cervix, lacerations which were evidently the result of previous labors. The abdomen was very large and fat. The entire appearance was that of a very luxurious woman, who was overburdened with fat. The recti muscles were separated, which permitted the abdominal contents to be more readily palpated. The uterus was large, movable, and not especially tender. In front of the upper part of the uterus was recognized a tumor the size of a child's head, which could be moved from side to side, and apparently had a long pedicle, which, so far as I could determine, was connected with the anterior face of the uterus. The mass was quite firm, giving the sen-

*Read before the Philadelphia Obstetrical Society, March 4, 1897.

sation of a bone. A subsequent examination gave over a part of its surface a crepitation which produced the suspicion that adhesions were forming, leading to the suspicion that injuries during birth or changes subsequently had resulted in death of the part and the consequent sapræmia from which the patient was suffering.

This was the condition upon my second visit, and was associated with continued elevation of temperature and another chill. An operation for the removal of the mass and possibly the uterus as well, was decided advisable. The vagina, as a preliminary, was carefully scrubbed, during which a tear was discovered upon the right side posterior, which, however, presented no exudate. On the left side near the uterus was seen an opening, not before discovered, in which some dark clots were noticed.

The abdomen was opened and the uterus raised, when, much to my disgust, no tumor could be seen. The fundus did not present the sense of resistance necessary to account for the mass which we had felt. Passing to the left a child's-head sized tumor was brought up, which was adherent above to a broad band of the omentum and below by a fold of peritoneum to the pelvis immediately to the left of the bladder. The tumor was swung between the omental adhesion and this fold, so that when undisturbed it would lie in front of the uterus and could be pushed to either side, but more readily to the left. The adhesions were ligated and the mass removed. The uterus was then removed without difficulty and without hemorrhage.

The base of the peritoneal attachment of the tumor and in front of the bladder was black, evidently from an extravasation of blood. By investigation external to the fold it was seen that this supposition was correct. A large collection of blood, a thrombus, had formed, which extended along the left side of the vagina nearly to the vulvar orifice, and was the clot which I had seen through the vagina. The abdominal wound was closed, and after it was dressed the vagina was torn down from the opening at the left of the cervix to the bottom of the dissection to insure the better drainage. The patient was put to bed in fairly good condition, but the temperature did not subside, and she died thirty-six hours later.

Reviewing this case, her condition was undoubtedly a result of sapræmia from infection of the pelvic thrombus. The growth, while contributing through the compression of its pedicle to the formation of the thrombus, was not itself injured or affected by the parturition, and had produced no baneful influence upon the convalescence.

In the light of this knowledge, the patient would undoubtedly have had a better chance if we had ignored the existence of the

growth, and confined our attention to the treatment of the infected thrombus by careful irrigation and drainage.

A point of interest in the case is the evidence that the original pedicle had been destroyed by torsion, as the left tube has disappeared, and the tumor has subsequently derived its nourishment from the omental and peritoneal adhesions. The history of the patient, however, afforded no clue to the time when this accident had occurred. The upper part of the tumor was hard and bone-like, the central portion had a thin shell of bone, which crepitated under pressure. The inferior portion was soft, fluctuating, and, upon being opened, gave vent to a thin, oily material, and the cavity was found filled with hair.

REPORT OF A CÆSAREAN SECTION.*

By W. Reynolds Wilson, M.D., Philadelphia.

L. A., the subject of this report, a colored *gravida* of fourteen, presented herself for examination at the Obstetrical Clinic of the Philadelphia Lying-in Charity on July 28, 1896. At that date the fetal heart sounds were detected and the diagnosis of pregnancy was established, the latter having progressed to the completion of the sixth month. The circumference of the abdomen was 84.5 cm.; the girl's height, four feet two inches. She was symmetrically formed and presented no evidence of bony malformation from rickets. The relative development of the pelvis appeared normal. The pelvic obliquity was also normal. The external measurements were as follows:

The distance between the ant. spines, 21 cm.; between the crests, 24 cm.; the external conjugate, 15 cm. The measurements at the outlet were not noted.

The diagonal conjugate was measured approximately by introducing the hand and measuring the distance between the tip of the second finger, which had been in contact with the promontory of the sacrum and the point on the inner surface of the first phalango-metacarpal joint, which had been in contact with the under surface of the symphysis. This measurement was slightly under 9 cm. The true conjugate was estimated at 7 cm., deducting less than 2 cm. from the former measurement. The circumference of the pelvis was 78 cm. It will be seen from these measurements that the pelvic

*Read before the Philadelphia Obstetrical Society, March 4, 1897.

anomaly consisted in size rather than in form. No anomaly of fetal development as to size was detected by palpation.

Toward the end of pregnancy the head was diagnosticated as the presenting part, and the fetal heart was heard to the left, below the umbilicus.

The conditions in the case presented relative indications for Cæsarean section, based upon a general contraction of the pelvis, the deformity being of serious degree by reason of the lessening of all the diameters, and especially the internal conjugate. The diminution of the internal conjugate to seven centimetres might, in itself, be considered moderate, and in itself demanded only expectant treatment, but taken in conjunction with the lessening of the other diameters it made the outlook serious. There appeared to be, however, no necessity for operating before the accession of labor, as the patient was to remain in the hospital, where she could have the proper surroundings necessary for immediate surgical intervention, and as the Porro operation was not considered. It was, therefore, thought advisable to wait until the chances for complete uterine contraction, with separation of the placenta and drainage through the cervical canal, should occur. The induction of labor was not indicated, for the following reasons: first, the actual development of the fœtus as to size and the compressibility of the fetal head were not known; second, the dynamic influences of labor; that is, the uterine contraction and the moulding due to pelvic resistance, were untried. In other words, with the head in the most favorable position, the fetal development moderate and the compression of the head extreme, there was a possibility of delivery. The absence of any one or all of these conditions, however, could not be determined until labor had begun, and, therefore, it seemed better to wait until the indications for intervention were clear.

Labor pains began during the night of November 3. They increased in frequency and force until half-past twelve of the following day, when dilatation was complete. The head at this stage remained freely movable above the inlet, while a pointed pouch of membranes projected through the dilated os. The parturient was in good condition, her pulse, temperature and respiration were normal, and her pains regular and of an expulsive character. No contraction ring was observed. The fetal heart sounds were normal and the fetal movements active. The vaginal secretion was normal, and the edge of the os externum thin and evenly dilated. It was deemed opportune to interfere at this stage, as the engagement of the head seemed an impossibility, and as the degree of contraction contraindicated the milder operative measures. The patient was accord-

ingly prepared as if for ecliotomy, the vaginal tract receiving special attention.

The uterine tumor was grasped at the fundus and over the symphysis by either hand of the assistant and held firmly enough in place to keep the abdominal wall on the stretch and cause the linea alba to correspond to the median axis of the uterine body, thus facilitating the division of the muscular layer of the abdominal wall. The incision was carried to two inches above the umbilicus and extended by the use of scissors well down to the peritoneal deflection at the bladder. The fundus of the bladder was depressed, and thus kept free from the extension of the incision. As soon as the uterine tumor was exposed the edges of the incised abdominal wall were pressed down around the uterus to prevent the escape of the intestines, although the uterus was not delivered. The uterine wall was incised rapidly to the sub-mucous layer, the identity of which was marked by the dilated sinuses. This layer was divided more carefully, in order to avoid either incision into the placenta, should it have been situated beneath the incision, or premature escape of the liquor amnii. As the uterine tissue was divided, the tense bag of waters protruded through the opening. The incision was enlarged to the fundus, the membranes ruptured and the amniotic sac evacuated of fluid. The child, which lay in normal attitude, the head presenting and the back toward the left, was delivered by grasping the feet. The uterus, which was firmly compressed by manual compression of the cervix, rapidly contracted as the head was delivered. The delivery of the head was accomplished by means of flexion, the fingers being introduced into the mouth and the chin being brought in apposition to the sternum. The cord was clamped and the crying infant given to the nurse.

After delivery of the child the intestines were kept in place by sterile gauze pads, and both the uterine and abdominal cavity freely irrigated with hot sterile water. The latter procedure was effective, both as a preventive of shock and in stimulating uterine contraction. It took some minutes to separate the membranes, owing to the contraction of the lower segment of the uterus, but, by gently relaxing the pressure over this portion of the uterus, they were finally removed. Silk sutures were introduced through the uterine wall, not including the endometrium, and superficial silk sutures included the peritoneum and the superficial muscular tissue. Through and through silk sutures closed the abdominal incision. In all, there were thirteen uterine and seventeen abdominal sutures. The wound was dressed with a sterilized pad, and a Canton flannel binder applied. The patient sustained practically no shock from the opera-

tion. The time required to complete the operation was twenty-five minutes. The child weighed seven pounds and three ounces. The measurements of the fetal head were as follows: Sub-occipito-bregmatic, 9 cm.; occipito-frontal, 12 cm.; occipito-mental, 12.5 cm.; biparietal, 8.5 cm.; circumference, 35 cm.

The puerperium was marked by a slight rise in temperature, reaching to 101° F., as the highest point, and subsiding to normal on the tenth day. Accompanying this there were no local symptoms, excepting slight tympany. The record of the puerperium on the tenth day presents the following note:

"Patient in excellent condition; wound perfectly dry and clean. Involution complete to date; that is, the uterus is hard, but retraction is somewhat delayed; no sensitiveness; lochia serosa."

The stitches were removed on the eleventh day. There were no evidences of irritation along the line of incision, except at the umbilicus, where some slight overlapping of the edge of the wound showed a granulating surface. Lactation was normally established. On the fifth day the infant developed a mild conjunctivitis, probably from contact with an adjacent case of specific ophthalmia. With this exception the child's condition was favorable.

In commenting upon the indications in the case, we must note that if the growth of the pelvis had ceased our choice of procedure would have been different. The Porro operation would have been considered. As it was, we were dealing with an undeveloped, non-rachitic pelvis, and the chances of further development warranted the less radical operation. Otherwise we might assume, irrespective of the age of the patient, that the deformity was that of a generally-contracted dwarf pelvis; but in so doing we should have to disregard the absence, in our case, of the most positive signs of this, namely, narrowness of the sacrum, with lessening of its length and contraction at the pelvic outlet. The remaining doubtful point in the diagnosis of deformity must not, however, be lost sight of; that is, the possibility of a simple justo-minor pelvis. Nothing but the future history of the case, as the girl obtains her full development, will make this clear. In the meantime, the diagnosis of a contracted pelvis of infantile type, associated with small stature, but not necessarily dependent upon a tendency to dwarfish development, must remain.

My thanks are due to Dr. Boyd and Dr. Hopkinson for their assistance in the case.

THE CHANGES IN THE UTERINE MUCOSA DURING PREGNANCY, AND THE ATTACHED FŒTAL STRUCTURES.*

(*Continued.*)

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Decidua Reflexa.

During the First Two Weeks.

The earliest stages of formation of the human reflexa have not yet been noted. In several mammalians they have been carefully studied, and have been found to be as follows: When the early ovum becomes attached to the vera it soon becomes covered, owing to the rapid growth of the latter. That part which closes over the ovum gives rise to the reflexa. It is probable that the human reflexa forms in the same manner, chiefly because of its identity in structure with the compact portion of the vera.

The earliest pregnant uterus in which it has been noticed was the twelve-day specimen of Reichert's. His description is only macroscopic, scarcely any minute details being furnished. On opening the vera, the reflexa was noticed as a lens-shaped projection on a round elevated area of vera on the posterior uterine wall. Its transverse diameter was 6 mm.; its height was 1.4 mm. At the free pole there was an area 3 mm. in diameter, which was very thin. This area was believed by Reichert to mark the recent closure of the reflexa over the ovum. The outer surface of the swelling was smooth and free from glandular openings over its great extent. Only near the junction with the vera was the surface irregular and marked with gland-orifices. Reichert believed that that part of the vera to which the ovum was attached grew less rapidly than the surrounding portions, and that, therefore, the ovum became easily embedded by the upward growth of these portions.

Schwabe has also described the reflexa in an abortion case of the same period of gestation. He found that the outer surface of the reflexa was still mainly covered with epithelium continuous with that on the vera, though considerably more flattened. On the inner surface the epithelium was wanting.

*Read before the Royal Society of Edinburgh and awarded the first Research Prize of the Royal College of Physicians of Edinburgh in 1896.—Ed.

Between the Third and Fourth Week.

Eugen Fraenkel has studied the reflexa at this period in an abortion case. The width of the sac at the base was 16 mm. In height it measured about 10 mm. It consisted of a thick basal portion and a thin polar portion. On the outer surface of the basal portion, near the junction with the vera, several gland-orifices were noticed, and in the wall near the surface many blood-sinuses were noticed like those in the neighboring parts of the vera, only smaller. The inner half of the wall was free from these and very largely from glands, and therefore was more compact. The decidual cells toward the inner surface appeared more compressed than in the outer part. Here and there blood-extravasations were found in the decidual tissue. Some of the glands could be seen passing down towards the vera or serotina.

Here and there on the inner surface a blood-space could be seen opening into the intervillous spaces of the chorion læve. At the mouth the endothelium was more or less absent. The thin polar portion of the reflexa had no regular structure. The decidual cells were mainly round or oval, and arranged in irregular groups. Small blood-spaces were found throughout, mainly in the middle portion. Very few remains of glands were found. (Selenka found in the reflexa of *Hylobates*, glands scattered throughout the reflexa.) Degeneration had commenced in the outer polar portion. Its innermost part was a fibrinous-looking layer which here and there extended into the substance of the wall. In one part the same change was found on the outer surface.

At the Sixth Week.

The appearances presented are considerably like those just described. The distinction between the basal and polar portions can be made out. The basal part can be divided into an inner compact and an outer spongy layer, the latter containing gland-spaces varying in number in different places. They are not at all as numerous as in the spongy layer of the vera or serotina. They are lined with cubical epithelium in parts. Here and there it is cast off into the lumen. As a rule, these spaces are elongated in a direction parallel to the surface of the reflexa. A few are nearly perpendicular to it however. Some can be traced downwards for a long distance into the substance of the serotina or vera. I find none opening on the inner surface of the reflexa and very few on the outer surface. Towards the pole the glands disappear, and at the extreme portion only occasionally can a trace of one be found.

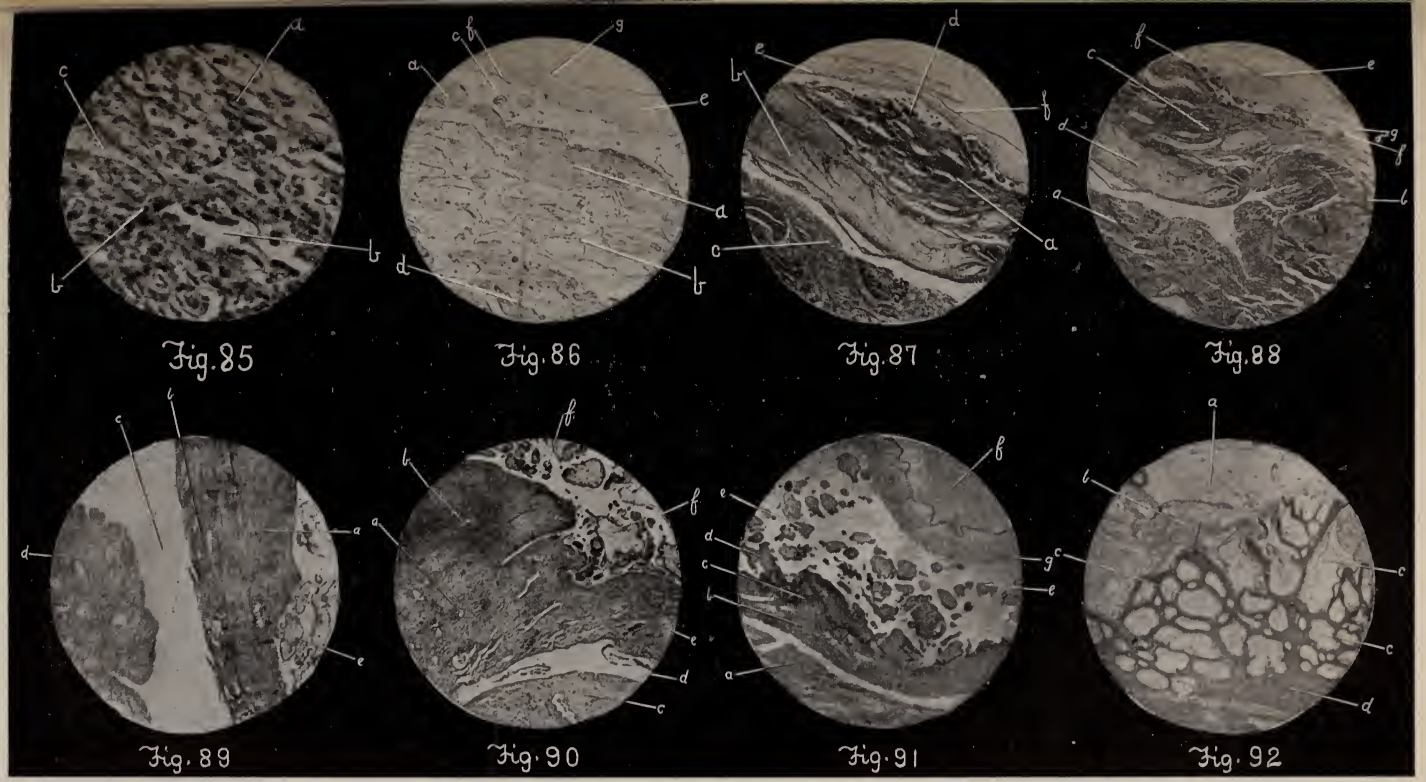

FIG. 85. SECTION OF REFLEXA FROM SAME SPECIMEN.

a, decidual cell; *b*, gland space; *c*, blood sinus. X. 290

FIG. 86. SECTION FROM 16-WEEK PREGNANT UTERUS.

a, compact layer of vera or of blended vera and reflexa; *b*, spongy layer; *c*, remains of villi of chorion tæne; *d*, muscle; *e*, delicate tissue joining chorion and amnion; *f*, chorionic epithelium; *g*, amnion. X. 25.

FIG. 87. ANOTHER FROM THE SAME.

a, reflexa with blood-sinuses and gland-spaces; *b*, outer part of reflexa greatly torn by extravasated blood; *c*, vera; *d*, villi of chorion tæne; *e*, chorion; *f*, amnion. X. 25.

FIG. 88. ANOTHER FROM THE SAME.

Junction of reflexa, vera and scrotina.

a, vera; *b*, edge of scrotina; *c*, reflexa; *d*, blood extravasation into outer part of reflexa; *e*, amnion. *f*, villi; *g*, chorion. X. 25.

FIG. 89. SECTION FROM 6-WEEK COMPLETE ABORTION.

a, inner part of reflexa; *b*, outer part of reflexa; *c*, space between vera and reflexa; *d*, vera; *e*, villi. X. 25.

FIG. 90. SECTION FROM 6-WEEK PREGNANT UTERUS.

a, reflexa close to scrotina; *b*, extensive blood; *c*, vera; *d*, space between vera and reflexa; *e*, reflexa, a short distance from its base; *f*, villi of chorion tæne. X. 25.

FIG. 91. SECTION FROM 4-MONTH PREGNANT UTERUS.

It shows reflexa and villi of so-called "reflexal placenta."

a, vera; *b*, reflexa; *c*, fibrinous degeneration in reflexa; *d*, villus attached to reflexa; *e*, free villus; *f*, amnion; *g*, chorion. X. 25.

FIG. 92. SECTION OF CERVIX FROM 5-MONTH PREGNANT UTERUS.

a, cervical canal; *b*, mucus; *c*, distended crypts and glands of mucosa; *d*, connective tissue and muscle.

Throughout blood-spaces are found. They seem to vary considerably in distribution. Here and there extravasations have occurred into the decidual tissue. It is found in fresh masses or changed to fibrin. Occasionally some blood can be found in a gland-space. In the basal portion I have found a few blood-spaces communicating with the intervillous spaces of the chorion læve. In one or two instances extending into the vessel are masses of syncytium or neucleated plasmodial fœtal epiblast.

Degeneration has advanced considerably in the reflexa. The innermost part of the wall is the seat of a layer of fibrin-like material of irregular thickness and arranged in a sort of reticulum or as a uniform mass. This layer is thickest at the pole. This change is apparently a kind of coagulation-necrosis in the decidual tissue, though some of the surface layer may be fibrin formed from blood. Similar smaller pieces of degeneration may be found in the substance of the wall, mainly in the inner portions, very rarely in the outer. Here and there numerous leucocytes are found in their neighborhood. In a few cells division may be seen. In several places the decidual cells appear to have become fused, the blended cells having a swollen, homogeneous appearance and taking on only a faint stain. Eugen Fraenkel has also noticed this. Possibly this condition is the earliest stage of the fibrinous degeneration.

On the inner surface of the reflexa no trace whatever of the original cells lining that part of the vera from which the reflexa has been developed can be found. (The relation of the inner surface to the chorion will be afterwards considered.)

On the outer surface, for a short distance next the vera, very much the same condition is found in the epithelium as on the neighboring part of the vera. Nearest the base the cells are of low cubical shape and fairly regularly arranged. Further out they are more flattened, more degenerated, with breaks in their continuity. Still further out they have mostly disappeared.

During the Second Month.

Several specimens have been carefully described by E. Fraenkel and one by Minot. At this period the chief change noticed is the increased fibrinous degeneration. Fraenkel describes also a good deal of blood-extravasation in the decidual tissue.

During the Third Month.

By this month the hydroperione is mainly obliterated. The reflexa is in contact with the vera, though not adherent to it. It has

become thinner, and the great mass of it is altered so that the original cellular structure can only be made out well near the base. The cells are broken down and blended into a structureless mass, the fibrinous or hyaline change having spread throughout the greater part. Many leucocytes are found.

After-Changes in the Reflexa.

It has been generally taught that the reflexa blends with the vera, and that it more or less forms the inner layer of the latter during the advanced months of pregnancy.

Minot and E. Fraenkel have cast doubt upon this view, and my observations go to support them. During the fourth month, I have found that the reflexa while in some parts distinguishable as a thin, almost complete fibrinous or hyaline layer lying in contact with the vera, is, in others, entirely absent, the chorion læve lying against the vera. At this period there is scarcely any degeneration in the vera proper, and it is therefore quite easy to distinguish the vera from the reflexa.

During the fifth month traces of the reflexa may also be found in parts. In the sixth and following months neither Minot nor I have been able to find the slightest remnants, though it is undoubtedly possible that they may occasionally exist after the fifth or sixth month.

As to the nature of the degeneration, it is evidently a kind of coagulation necrosis as a result of which cell-substance and nucleus became quite destroyed. It has long been held that there is fatty degeneration. I have not been able to find any evidence of such a change. The work of G. Klein, E. Fraenkel and others seems to have sufficiently disproved the long-held view. There are appearances which certainly resemble fatty degeneration, but no fatty reactions can be obtained. These appearances are really caused by vacuolation, which may occur either in the nucleus or in the cell-substance or in the fused hyaline cell-masses.

As to the primary determining cause of the necrotic changes it is impossible to speak with certainty. It is doubtful if it may be related to imperfect blood-supply. At first the reflexa is richly vascularized, and one would suppose that even the distal polar part would be well nourished. Possibly, owing to the great multiplication and growth in size of decidual cells, giving rise to the compact decidual tissue, the lymph-spaces are to a large extent obliterated, so that gradual death may be set up at various points. Possibly also, this change is further assisted by the presence of blood effused in differ-

ent parts of the reflexa. Possibly also, the circulation is slowed by the outward pressure of the rapidly-growing ovum.

It is interesting to enquire what is the relation of this hyaline or fibrinous degeneration to the chorion læve. Frankel believes that, as the change is generally found first on the inner surface of the reflexa, it is probably secondary to the early degenerative changes in the villi of the chorion læve. Possibly the relationship is only one of association, both reflexa and villi degenerating from causes inherent to themselves.

There is yet another possibility which I shall afterwards consider, viz., that the degenerate condition of the reflexa is the occasion of retrogression in the villi related to it, *i. e.*, as there is no stimulus to increased growth and vitality in the villi of the læve, owing to the non-active condition of the reflexa, and as they come into relation only for a short time with a very small quantity of blood, they therefore do not functionate to produce hypertrophy but slowly undergo retrogressive changes.

In certain cases in which there is abnormal growth and continuance of the chorion læve, forming the so-called reflexa placenta, there seems to be an exceptional development of the reflexa from the very beginning, while the degenerative processes are probably much less marked than in ordinary cases. In a four-month case, in which there was a reflexal placenta, I found that there was very little of the fibrinous degeneration, though a good many cells were vacuolated.

Apart from the intrinsic tissue changes directly related to degeneration of the reflexa, it must not be forgotten that there is probably some part played by the mechanical stretching due to the increasing ovum.

As to the part played by the decidual reflexa, it seems mainly to fix and steady the ovum during its early life while the placental circulation is being established. It probably also furnished a little nourishment to the ovum through the chorion læve, but this is of very minor significance and of brief duration.

A CASE OF INVERSIO UTERI POST-PARTUM, WITH REMARKS UPON THE ÆTIOLOGY OF PUERPERAL INVERSION OF THE UTERUS.*

By George Tucker Harrison, M.A., M.D., New York.

On the 30th of December, 1893, I was called to see Mrs. G., aged thirty-three years, who was in labor with her third child. This woman had a narrow pelvis, as I knew from former experience, and finding on my arrival that the os was well dilated but that the head was still detained at the brim, I decided that podalic version was indicated. She was therefore brought under the influence of ether, which was administered by Dr. Gessner Harrison, and I delivered a living child in a few minutes. After the birth of the child Crede's method was attempted, but the uterus showed no disposition to contract; on the contrary, there was a marked condition of *atony*. Efforts to stimulate the uterus to contraction were made intermittingly. After the expiration of about three-quarters of an hour, during a pause in my attempts at securing contraction, the woman made violent bearing-down efforts, and, to my astonishment, I found a complete inversion had originated. The placenta was attached firmly to the entire fundus. The whole mass lay in front of the external genitalia. The hemorrhage was not of a profuse character, and as the woman was still partially under the influence of the ether, there was no shock. The placenta was peeled off by digital manipulation, and the uterus immediately reinverted. As the ring of contraction was not firmly contracted, I had no difficulty, after depressing the fundus, in carrying it upwards until the whole organ was restored to its normal condition. Ergot was administered by hypodermic injection over the symphysis and good contraction secured. In view of the circumstance that strict aseptic methods were used in the management of the labor, the woman recovered without a bad symptom. Inversion of the uterus, *post-partum*, is a rare event. Of the exceeding rarity of this morbid condition an idea may be formed when we are told that in the St. Petersburg Lying-in Institution, in a period of fifty-four years, during which two hundred thousand births occurred, not a single case of inversion was observed. In the Dublin Rotunda Hospital one case of inversion occurred in one hundred and ninety thousand births. The genesis of puerperal inversion is

*Read before the Woman's Hospital Society, February 9, 1897.

not only of vast importance in the interest of scientific truth but also in a reverberative sense, as affecting the skill of the obstetrician. In most works on obstetrics external violence is invoked to a great degree as a factor in the production of inversion. According to Barnes,* in numerous cases, "the accident followed pulling upon the cord, or other forcible attempts to deliver the placenta." This author also calls attention to the fact that several histories state that "inversion occurred during strong pressure on the abdomen." W. Beckmann,1 however, has carefully studied one hundred cases of inversion, and attained to the conviction that inversions occur most frequently in primiparæ and young persons, and that violent manipulations rarely play the most important rôle in the ætiology; that, on the contrary, more or less constant conditions existing in the act of birth itself bring about the puerperal inversions in the majority of cases. The necessary and essential condition precedent to the origin of a puerperal inversion is the relaxation or flabbiness of the just accouched uterine body in its upper part and an open os. Two modes of origin must be discriminated: the one evoked spontaneously and the other by traction on the umbilical cord. Spontaneous partial inversion, the first stage of Crosse, constituting externally a cup-like depression, as a necessary postulate, presupposes an atonic condition of the uterus at the time of the expulsion of the child. In the genesis of inversion the attachment, more or less firm, of the placenta plays a conspicuous part. Hennig believed that the insertion of the placenta, at the fundus, greatly favored the occurrence of inversion. So far as traction on the cord is a factor in the origin of inversion, it may now be considered as demonstrated that this is only possible when there is complete atony and the placenta quite firmly attached. When the placenta is partially detached and there is a condition of complete atony the weight of the placenta may be considerably increased by the blood accumulating behind it, and consequently the atonic part of the uterus, to which the placenta was attached, may be drawn after it and thus a beginning inversion caused. The increased action of the abdominal muscles in bearing-down efforts favor the origin of inversion if there are no uterine contractions.

* A System of Obstetric Medicine and Surgery, p. 637.

*Zeitschrift für Geburtshülfe and Gynækologie, Bd. xxxi., p. 31.

MEDICAL THERAPY OF THE FEMALE GENITAL TRACT.*

By O. B. Will, Peoria, Illinois.

In choosing the topic on which I have the honor to present some considerations this evening, in response to your kindly recognition, I have not been unmindful of the high position and technical character of your organization. It has occurred to me, however, that it would be more opportune to deal with possibly lighter matters involving somewhat extensive personal experience, rather than with those of less widespread, even if of more advanced applicability. I therefore beg to express the hope that what I say may not be altogether without value, and that much light may be, by discussion, shed upon the points I shall touch, and such as will prove of great service to that larger body of practitioners whose acts are steadily governed by your dictum.

There certainly is a medical side to gynæcology, and in the therapy of the female genital tract medical resources have played and must continue to play an important part. As the disorders to which these are applicable are usually the result of infection from pathogenic germs, and under any and all circumstances accompanied by vascular engorgement, if not stasis, more or less general and severe, with hyperplastic activity of varying extent and greater or less pain, it becomes necessary to select agents for the accomplishment, as nearly as may be, of the following objects, which seem legitimately to govern in all local therapy, viz.: depletion, anæsthesia, antisepsis, resorption and reconstruction.

In considering the medical means for the application of these principles, and accomplishment of these purposes, I think I cannot do better than to take up *seriatim* those of most typical and active character now before the profession, and analyze their virtues, in the light of personal experience and observation, as well as that of other observers whose attention has been critically assigned to the several phases of the subject.

In this recital I shall apply the methods and principles inculcated to the vaginal and uterine sections of the tract, in the order named, noting subsequently the exceptions or differences necessary in connection with other features of the individual parts.

Taking up, then, briefly, the immediate objects sought, in ap-

* Read before the Chicago Gynæcological Society, March 19, 1897.

proximate order, we ask ourselves what we mean by depletion, in this connection, and how can it be accomplished. Under states of engorgement of the pelvic viscera, especially the uterus and immediately adjacent tissues, in which the vessels are distended to their fullest capacity with their peculiar fluid contents, it seems necessary to deplete in some way, but it seems equally advisable, under our present pathologic and histogenic knowledge, to question the legitimacy of abstracting the serum, or fluid alone from them and thus furthering an accumulation and condensation of the more solid, organic constituents. Certainly a more formidable barrier to normal nutritive changes and tissue metamorphosis could not seemingly well be established. The healthy nutritive activities demand a rapidly moving, yet fluid, as the abnormal requires a sluggish, circulation. Any act that lessens the fluid and increases the solid constituents of the circulating medium, above the normal standard, places in jeopardy the functional well-being of any organ or tissue. And yet that is exactly what is being done every day, all over the country, by the use of the conventional boroglycerid and glycerine tamponade of the vagina. I was many years ago precipitated into this quagmire of therapeutics, together with the majority of practitioners, where I remained until rescued by a careful investigation of phenomena and results. Although a marked sense of comfort is speedily imparted by such treatment in cases of inflammation, and independent, active or passive congestion of the uterus and adjacent tissues, the relief obtained is only temporary, the conditions subsequently becoming even more aggravated and obstinate, excepting, possibly, in œdema of the mucous membrane and immediately underlying tissues of the vagina. If we stop to philosophically and clinically consider the pathological conditions, in relation to these salient features of this routine treatment we shall find our efforts valuably repaid in the correction of a flagrant therapeutic error. No system or method of depletion through the mucous membrane of the genital tract, excepting one of those involving the periodical abstraction of blood, such as systematic venesecretion, or the application of leaches, can accomplish the purpose of relief from vascular congestion without a detention of those elements which, more than all others under the circumstances, make for obstruction and destruction. This is a fact that we dare not overlook in the biology of tissue change and the economy of restoration.

As compared with the foregoing popular method, we have, in the use of the time-honored *hot douche* a much more rational and meritorious procedure, and one perfectly in consonance with the

edicts of modern pathology and histology. By the action of the penetrating, moist heat upon the vaso-motor nervous system, as well as directly upon the tissues themselves, the blood is driven either backward or onward into receptacles of larger calibre, and where it becomes more amenable to the general circulatory forces of the system, and where it can better maintain its integrity and vital force. We are all aware of the constant value of heat, especially moist heat, in all classes of inflammation and congestion, wherever located, and in the therapy of the female genital tract is use deserves a position second to none other. But here arises the ever-important question of *how* as well as *what*. How to best apply this agent, and the answer to that question means much in results. The vaginal and uterine tracts are the avenue; the best means are a fountain syringe and sterilized water. But there are other things governing its administration for utility in the highest degree. The first consideration is the patient's immediate position, and second the time occupied. The use of a hot vaginal irrigation while sqatting over a vessel is practically worthless. Such position is a most unfavorable one, in that gravity alone, without the inevitable aid of the patient's muscular efforts is sufficient to force the pelvic and abdominal contents downward, choking up the outlet and mechanically obstructing the circulation, the very thing that should be by all means avoided.

The most philosophic and practically effective positions for such are the exaggerated lateral and knee-elbow, the former being readily applicable, without discomfort, on a couch, with the aid of a Kelly pad, and the latter with scarcely more discomfort and annoyance in an ordinary bath-tub. In the assumption of either of these positions, if the patient be properly instructed as to the intent, the abdominal pressure is of course removed, the pelvic organs elevated, and the penetrability and efficiency of the heat in emptying the local circulatory system enhanced many fold. In fact, there seems to be no other satisfactory way of applying this most indispensable synergistic and curative agent. After such a vaginal irrigation, given in small stream, and as hot as can well be borne for half an hour, the patient should be enjoined to maintain the recumbent posture for several hours, after which she may be subjected to any further local treatment desirable. In the event of intra-uterine irrigation being resorted to, as is often necessary, it should be given in the manner hereafter described, and should follow within eighteen hours the prolonged vaginal bath. A more mistaken and pernicious habit cannot be indulged in, than that of using the hot vaginal douche in the morning and then allowing the patient to be on her feet the re-

mainder of the day. The relaxing effect of the application is such as to temporarily soften and weaken the tissues and supports, and cause them to lose their resiliency for some hours, during which, if the erect position is indulged in, the pelvic organs settle down, and when the vessels again fill, as they measurably must, their position is more cramped than before, and their tortuosity increased. On the contrary, if the recumbent posture is maintained until reaction takes place, the normal elasticity of the vascular and other tissues is restored, and a greater resistance offered to all morbid impulses. These are not merely theoretical, but tried, true and extremely practical facts. I am not pretending to offer them as anything specially new, but only in the line of an attempt to fix therapeutic values. These vaginal irrigations should be repeated usually as often as every day, and that at night, reserving the morning hour for local applications of other character such as intra-uterine or simple vaginal, as the physician may think best.

Another element of importance in securing the best results, and judiciously associated with this form of depletion, is the property of some of the salines, such as chloride of sodium. The effect of their solution in the water is peculiarly satisfactory and trustworthy, especially in intra-uterine irrigation. They not only cleanse the mucous membrane of accumulated secretions, but so alter the glandular products as to favor and promote their rapid elimination, relieve the tension, and stimulate the resolvent and nutritive forces. It is almost marvelous what a change is sometimes produced in that way by persistence, under circumstances of apparent gravity. Then, too, this action is measurably antiseptic, and the astringency exercised of such a character as not to interfere rapidly, if at all, with the patulousness of the emunctories. As an additional and more positive antiseptic and germicide the mercury bichloride may be used alternately with the saline, and in that way I have secured the most excellent results in eliminating septic agents and products yet within the confines of the uterine mucosa.

As has been intimated, the foregoing method of depletion is as applicable to the interior of the uterus as to the vagina, excepting that its application must be in the hands of the physician himself, or those of a competent nurse under his immediate supervision, and with a technique somewhat different. In intra-uterine therapy glycerine has no place whatever. I have never seen it applied without the production of a degree of pain immeasurably in excess of any possible benefit. The hot aseptic and antiseptic douches, however, are as acceptable and valuable here as in the vagina. In relation to the uterine irrigation, the dorsal position of the patient seems to be

the only practicable one, preferably after a seance of five or ten minutes in the lateral or knee-elbow attitude, in order to relieve the tension of pressure. As a preparatory adjunct this is especially valuable where the uterus itself is almost exclusively the seat of inflammatory and congestive disorder. With the patient on her back and a valvular speculum in situ, the os uteri naturally patulous or rendered so artificially, a double current catheter or similarly constructed uterine douche point, should be introduced up to the fundus and a stream of water, charged with the saline or antiseptic, of a temperature at first slightly in excess of that of the body, increasing to 120 degrees F., should be turned on from a fountain elevated but little above the plane of the patient's hips. Notwithstanding the ordinary sensitiveness of the uterus to injections, it is astonishing what a degree of toleration is thus quickly established, and how kindly the organ acts for a long time afterwards, rendering it doubly amenable to manipulation and the application of other desired agents. Such irrigation should be kept up steadily for at least twenty minutes or half an hour.

Although the irrigations thus described are in themselves anæsthetic, we are often confronted with conditions of hyperesthesia that absolutely prohibit manipulation of any kind. Under such circumstances an initial local anæsthetic or anodyne is an absolute necessity. When such is required in the medication of the female genital tract, I believe there is nothing equal in efficiency to cocaine. A ten-per-cent. solution, painted at first upon the mucous membrane at the introitus vagina, gradually encroaching upon the interior, where it is not so much needed, will quickly enable one to introduce the necessary instruments, and the patient to assume the relaxed condition desired as preparatory to efficient vaginal irrigation. Also, if a little of the same solution be injected into the cavity of the uterus it will prevent the disagreeable influence of the first impact of the irrigating stream on the interior of that organ, as also the mechanical irritation of the irrigator itself. In that way is met one of the very first and most important requirements in the direction of conserving local vital energy. Nothing so tends to an increased friction of discordant elements as nervous irritation and pain, and it becomes necessary under all forms of medication to provide as nearly as possible against this ever present contingency.

Now, I have dwelt thus fully on the foregoing methods of medicinal depletion, for the reason that they constitute the classic vaginal therapeutic douche of the general profession, and so clearly embody, probably, all of medicinal virtue in a certain sphere that their merits and demerits should be placed under the most rigid

scrutiny of those who have opportunity to study and know them best.

In further consideration of medication by the vaginal route, it is not possible for me, even if I would, to refer in detail to the proverbial thousand and one things that have been utilized for that purpose. They have been almost co-extensive with our Materia Medica. A few, however, as tamponade and douching (with which they are largely associated) stand out prominently to view, and challenge, so to speak, the notice and criticism of the profession. It is a few of these, typical in therapeutic character, that I wish to further consider.

It seems to me a perfectly legitimate and altogether commendable ambition to follow in this branch of medicine the trend of the nineteenth century advancement, in utilizing chemical, or chemico-vital elements and products, together with other dynamic influences, in a way to elicit if possible the natural self-defending activities of the organism, which unquestionably constitutes the true, rational medical therapy. That ideal, in which medicaments so act upon the nutritive, resolvent and constructive forces as to change their character and course from morbid into normal channels, without abrupt and violent, not to say destructive, interruption of the vital processes. But, with the few recognized agents of that class at our command have we even measurably reached that point in local medication? As to resolvents and absorptives, specifically speaking, we seem to have the nearest approach in the equally conventional and routine iodine and ichthyol. But what have they ever accomplished, and what can they be depended upon to do in this line in the therapy of the female genital tract? Used as the former generally is, it has in my observation accomplished but little if any good. Its reputation seems to have been based largely upon its well-known constitutional alterative influence. In the first place, the form in which it is applied is decidedly faulty, and handicaps any beneficial effect in the line proposed. The tincture usually used is almost useless for any purpose other than as a superficial stimulant and irritant, and when very strong as a light cauterant, suppressing exuberant granulations or superficial exudate. It is not soluble enough to be taken up by the adjacent fluids, percolated into the tissues, and placed so as to act in any specific way as a resolvent, and yet it is constantly applied with that end in view. It is a fact that the alcoholic element quickly evaporates and the iodine, in a metallic state, is precipitated upon the surface to which it is applied, thereby becoming absolutely inert and helpless, waiting to be cast off by exfoliation of the epithelium or adventitious exudate. To

be of any influence in the way and for the purpose contemplated, it seems but reasonable that this drug should be in aqueous solution, so that the absorbents, or tissues themselves by endosmotic action, can take it up and give it a chance to exert the alterative influence for which it is given credit, upon the deeper strata. Applied in such way, after a period of depletion, I believe it to be of great activity and value in inducing healthy, resolvent tissue change, by entering into and modifying the cell constituency in a way perhaps similar to the action of mercury in syphilis, or even that of the drug in question itself in certain phases of the same disorder. The unquestioned value of iodide of potassium in hyperplastic conditions, when conveyed into the tissues by the electro-endosmotic force, is due no doubt to the direct contact of the readily-soluble form of the iodine with the affected tissue.

Ichthyol is about the only other agent popularized in this line; especially instigated by the Germans. But how seriously the manner of using it in this country interferes with what true medicinal value it does possess! Certainly is it applied with no sense of proper therapeutic adjudication. In and of itself an agent of peculiar and intense penetrability and synergistic activity, it is usually mixed with glycerine, and at once, without due preparation, applied on tampons to the vaginal vault, with the false notion that it is thus in combination with its proper therapeutic companion. It is true that benefit is more or less constantly derived from it in that way, but it is rather in spite of than in consequence of the unholy alliance into which it has been forced. Used preferably pure, or in strong aqueous solution, in contact with a surface properly prepared for it by fair depletion and the removal of viscid secretions, it becomes, in both vagina and uterus, what it is destined to be used as, one of the most, if not the most, powerful resolvent agents and satisfactory anodynes and antiseptics that we possess, and one that will accomplish more in the reduction of inflammatory and congestive, not to say neurotic, pelvic disorders, than we at the present time probably apprehend. I can, from extensive personal experience, find nothing but confirmation of all that has been claimed for this remedy in the direction indicated, and I have no doubt that further investigation will reveal a valuable field for its application in some of the intricate affections of the local nervous system, over which it seems to exert at times a peculiar and gratifying soothing influence.

Having come to this point, I hesitate, knowing full well that I am about to tread upon dangerous ground. We all realize the fact that we have often to deal with surface and underlying tissues the seats of infection and its consequences, of long standing, with inter-

stitial changes of grave and obstinate character, sometimes extending much beyond the confines of the mucous membrane. These infections differ, as we all know, in nature and virulency, the uses and abuses of the genital organs rendering them specially liable to affliction of the kind. I have elsewhere (Detroit "Medical Age," Jan. 10, 1894, also "Sajous' Annual," Vol. 2, 1895), recorded some original investigations into the bacteriology of the female genital tract, and my conviction is, that by far the larger proportion of severe and extensive chronic inflammatory affections of the pelvic organs are due to gonorrhœa. Nevertheless, even the normal bacterial organisms of the cervical region may become pathogenic under certain circumstances. Whether that be so or not, the fact remains that there are conditions of inflammation and tissue change, of variable type, characterized by the presence and influence of infective elements so virulent, tenacious and veritably parasitic in character as to demand measures more intense in character and activity than those usually applicable in cases of simple inflammatory and superficially exudative disorder. At this point more strongly than elsewhere occurs a divergence of views. The man with the surgical bias wants to scrape, pack and drain. The man with the medical bias wants to cauterize. The former is confronted with the fact that no operation of relative magnitude has been accompanied with so many disasters and failures. To be efficient it must be done with thoroughness. To do it with thoroughness is now discovered to mean much in the way of exposure to further infection from interstitial infective nuclei. To pack is to retain elements of discord. Cauterization remains ofttimes practically the only alternative for protection, and is made to follow the surgical effort. The conservatively, or rather medically, inclined practitioner seeks to accomplish the same purpose by a repetition of the cauterant or escharotic.

I am now fully convinced that, barring the presence of fungosities and irregular growths, the method of cauterization is often the more satisfactory in the management of intra-uterine inflammatory and hypertrophic conditions, from whatever cause. Of recent years the profession has been the unwilling witness of the value of these agents as applied under the stress of public demand. The country is to-day flooded with, and the profession and women generally besieged by, the peddlers of scores of kinds or makes of wafers, capsules and tablets, consisting mostly of some powerful cauterant and astringent, masked under the protecting care of anodynes and antiseptics, to be introduced into the genital tract in all cases of presumed "ulceration," inflammation, catarrh, etc. The repetition of their use, with the synergistic influence of alternating hot baths and

irrigations, has unquestionably served to accomplish much in a curative way, and serves to teach us, as we have been taught before, the real position which should be given to the class of agents to which these bastard preparations owe their virtue. The acute observer can readily see not only the value but the rationale of this procedure. It is in just the class of cases not amenable to the milder measures that this form of treatment gives its most brilliant results. The cauterant, under the influence of the associated anodyne, with comparative painlessness, removes as it promotes, slowly but surely, layer after layer of adventitious tissue, destroying not only the parasitic cell-life at once within reach, but by directing the vital energies of the part to the immediate locality, throws up a barrier of leucocytic or other protecting elements, as well as furnishes at the same time a kind of depletion that really depletes, in that it carries away, through application after application and exudate after exudate, not only serum, but the surplus cellular elements, and with them the abnormal organisms with which they are infected, and which have been thus drawn into this vortex of pathogenic turmoil. No one is yet able to define the occult influences at work in cell formation and activity, as, for instance, in the epithelial proliferation and infiltration of carcinoma, and form and feature are not always in evidence, even as for or against morbid action. There are no doubt many vicious tendencies in cell life that we are not able to recognize in any other way than through disordered function. Aberrations in intimate structural development are yet beyond our ken, and in many cases of uterine disease associated with inflammatory complications I am convinced that such is the case, and that when we act upon the overshadowing principle of antisepsis, either by surgical extirpation, or the medical inveiglement and destruction, as applied to the adventitious formations, we are acting with equal justice, and in harmony with the best interests of the patient. I am compelled to admit my full conviction, after many trials and observations, that if as much attention were given to obtaining an accurate knowledge of the nature and use of cauterants, or escharotics, as is and has been given to the development of surgical procedures and technique, we would to-day be in the possession of means and advantages that we do not now have, and such as would revolutionize gynæcological practice. For the very reason that such objects have not been definitely and systematically pursued in the light of modern pathology and hystogenesis, no authoritative decision has yet been reached respecting the most desirable form of cauterant for the purposes described. I suspect that when it is decided upon, it will be in the nature of a mixture or compound

of some two or more of the at present well-known chemicals, but that, as in the case of surgery, their effective application must involve the expert and artistic personality of the operator. As for myself, I have found infinite satisfaction in the milder cases in the use of saturated solution of permanganate of potash, applied with a swab, and in those of more earnest type by the use of the zinc sulphate, reinforced, if need be, by a small percentage of the zinc chloride. This combination, in proportion suitable to the result desired, all the way from simple removal of the epithelial coat to extirpation of a bed of hypertrophied and extraneous tissue, can be applied in aqeous solution to the interior of the uterus, for example, where the action is most needed, protecting fully the cervical canal by the introduction into it of a pledget of cotton covered with an ointment of bicarbonate of soda in vaseline, or may be rubbed up in oil and then applied, thus wonderfully modifying not only the intensity but also the rapidity and character of its action. In this way a beautiful and satisfactory result may be obtained in the most formidable cases, if the depleting influence of hot irrigations has been resorted to and continued, which so prepares the parts as to measurably form a line of physiological demarkation to which the cauterant seems largely to limit its action.

Now, whether it be an evidence of weakness or of strength, I am willing to put myself on record as an advocate of the intelligent and thoughtful use of caustics in the treatment of a certain line of maladies afflicting the female genital tract. Located as I have been, it has become an imperative duty to, if possible, adopt and devise ways and means other than radically surgical for cure of many of the affections of the kind referred to, and I have become fascinated with the effort and its results. While I have not had the opportunity of much observation post-mortem, or after hysterectomy in cases with a clear history of cauterization, and do not know exactly what is the relative anatomical difference in the subsequently-formed endometrium, if any, I have watched as closely as it seems to me any one could, and have never found any more evidence of functional disturbance of any kind after the judicious use of caustics, than after surgical procedure.

In conclusion: The strictly professional and personal attention necessarily involved in the course of treatment herein outlined is the only objection to it that can, it seems to me, be properly urged. That objection must necessarily continue to obtain. In the light, however, of its peculiar efficiency in restoring health and maintaining integrity of function, there would seem to be no thoroughly justifiable reason for rejecting its widespread application, excepting in

the case of dependents on the charity of the profession and the public. I have personally conducted a large number of cases through this course of treatment, overseeing all details, and although it can best be accomplished in hospital, it can be effectively done outside, with the intelligent co-operation of the patient, and with the most surprising results in the way of acquiescence on the part of the organism and restoration of health. Strict attention to detail throughout is as necessary, especially in connection with intra-uterine applications, in this course of treatment as in that involving careful surgical technique, and the result equally representative of the care bestowed.

THE ABUSE OF TOPICAL APPLICATIONS TO THE ENDOMETRIUM.*

By Samuel L. Weber, M.D., Chicago.

I have been led to write this paper by observation that I have frequently made of cases of severe tubal infection following applications to the endometrium. Salpingitis, pyosalpinx, pelvic peritonitis and adhesions are of very frequent occurrence. I have read all works on pathology, that have been accessible to me, written prior to 1860. Before that date gynæcology was hardly a specialty, and topical applications to the uterus were hardly known and made. Although nearly all of these older works record the existence of inflammatory lesions of the uterine adnexa and of the pelvic peritoneum, yet but brief accounts of these is made, and the brevity and lack of emphasis plainly indicate that these were considered rare lesions. Only one, Rokitansky, gives a good and sufficiently detailed account of such lesions; and even in his book one plainly gathers that these are mostly of post-puerperal of septic origin. The enormous frequency of these lesions as they occur now, could not have existed at that time or they would have been described with greater detail and emphasis.

It is true that the much more frequent practice of criminal abortion of late years accounts for some of the increase in the number of cases of disease of the uterine annexa; but, how many of these cases are the direct result of intra-uterine medication? Gonorrhœa was as frequent then as now. Has not gynæcology caused as much suffering to women as it has relieved? I am well aware that intrauter-

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ine medication is not practiced as much now as it was ten and twenty years ago. Is it not practiced too much now? I think it is, and even by well-educated and well-trained gynæcologists.

The trouble is that we know so little as yet about the exact etiology of endometritis. Recent bacteriological work has shed much light upon the subject. More exact clinical work has shed still more. Most of it, however, is yet in the dark. Classification of the various forms of uterine infection is still indefinite and very unsatisfactory, as witness various recent works and various recent papers read in this and in other prominent gynæcological associations. I think we must consider, to-day, all forms of endometritis as septic; that is, the lesion or lesions present are caused by or in some cases maintained and intensified by bacteria. This is true of inflammations, acute or chronic, of any mucous membrane. Although proven in only a certain number of cases, the bacterial origin of inflammations of all mucous membranes, including the endometrium (except certain cases due to chemical insults) must be assumed in order to conform to the teachings of modern pathology.

A classification of the various forms of endometritis, which, though crude and unsatisfactory, but sufficient for the purpose of this paper, is the following: *Acute septic,* following labor, abortions and uncleanly operations within the uterine cavity. *Chronic septic*—an indefinite group, including cases succeeding the acute stage of acute septic, cases due to retention of fragments of placental or decidual tissue, and cases of endometritis caused and maintained by large infected lacerations of the cervix.

Acute gonorrhœal; chronic gonorrhœal, which is almost always a mixed infection; *chronic catarrhal,* a very large group, caused and maintained by diverse conditions. For the purpose of this paper, I must also consider in a separate class cases of endometritis, complicated by chronic inflammatory lesions of the tubes. Parenthetically, I may say, that I do not for one moment ignore that in all these inflammatory affections of the endometrium, the whole uterus is more or less involved. Tubercular, malignant and syphilitic endometritis being comparatively rare and only expressions of a deeper seated trouble, are not here included.

Acute Septic Endometritis.—In competent hands this is not treated by topical applications, and therefore need not concern us for the purpose of this paper any further. Irrigations with weak solutions of antiseptics are not considered topical applications.

Acute Gonorrhœal Endometritis.—Under this heading we may consider acute, subacute, and chronic gonorrhœal endometritis, so long as the infection is not a mixed one. Clinically, it is very often im-

possible to distinguish between the different stages, the subacute and the chronic inevitably following the acute. The impression prevails that in the majority of cases of gonorrhœal infection in women, the urethra and vulva are primarily alone involved. This is true in children and violated virgins. In females accustomed to coitus, it is the cervix which is primarily infected in the great majority of cases. In the large per cent. of the remainder the vulva and the uterus are infected simultaneously. If the latter is the case, the symptoms complained of are mostly due to the vulvar inflammation; the uterine infection giving much less suffering, is for the time being overlooked, and comes into prominence only after the subsidence of the inflammation of the vulva, and is then ascribed to extension upwards of the gonorrhœal infection. Gonorrhœal infection of the uterus rarely gives rise to severe symptoms. Backache, somewhat frequent urination, fullness in the pelvic region and the vaginal discharge is about all that is felt by the patient—rarely a little fever. Extension of the gonorrhœal infection may be downwards as well as upwards, and it is much more frequently downwards than upwards. The cervix is the seat of primary infection in the majority of cases. The outflowing discharge then infects the vagina, Bartholin's glands and other parts of the vulva, and frequently also the urethra and rectum. The infection has meanwhile, in perhaps all cases, extended to the whole endometrium.

In an untreated case, or, in a case in which only cleansing and palliative measures are employed, how frequent is extension of the infection into the tubes? I believe such extension, in the sense of a gonococcus infection is rare. I do believe, however, that in all cases in which the whole endometrium is infected by gonorrhœa and the infection is an acute one, the fallopian tubes are affected, and affected right from the beginning. Whether this primary tubal affection is gonorrhœal or is merely a congestion, is still a question. In the male we have an analogous condition. In acute anterior urethritis, if severe, there is a congestion of the posterior urethra. Post-mortem bacteriological examinations of either conditions are not at hand, as the disease is not a fatal one.

We have, then, in acute gonorrhœal endometritis, a gonorrhœal infection of the whole endometrium, with more or less congestion of the tubes. In a few cases the symptoms are severe enough to keep the patient in bed. In the majority of cases the disease is, as far as the symptoms are concerned, subacute or chronic from the beginning, the patient not confined to bed. It is in the ambulatory cases in this class of endometritis that the treatment attempted by the vast majority of physicians is by means of topical applications,

and it is especially in gonorrhœal endometritis that, in my opinion, so much harm is done by this method of treatment.

One moment to a consideration of the medicaments which are used for topical application. The list is a long one. The prominent ones are chloride of zinc, carbolic acid, iodine, iodized phenol, nitrate of silver, bichloride of mercury, persulphate of iron, tannin and iodoform. These medicaments are currently divided as caustics, antiseptics, astringents and alteratives. Now taking into consideration that all forms of endometritis are bacterial diseases, that especially in the gonorrhœal and septic cases, which comprise the large majority of cases treated, the bacteria are the sole inciting and maintaining cause of the inflammation, and bearing in mind the histological structure of the endometrium and the consequent thickness of tissue invaded by the bacteria—taking into consideration these pathological facts, it is wholly inconceivable how any action can be expected from these drugs except an antiseptic one. All topical applications to inflamed tissue, if they are to have any curative value, must have it by virtue of an antiseptic action. This is further true of all remedies for infectious diseases. A remedy in an infectious disease must do one of two things: it must either destroy the causative micro-organisms, or it must sustain or strengthen the resistant power of the tissues. All of the remedies used as intrauterine applications are strong, irritant, and caustic chemicals. Hence they cannot and do not assist the defensive powers of the uterus. They can act then only as antiseptics, and as antiseptics we must consider them all, even applications of strong chloride of zinc, which destroys the tissues together with the bacteria, something like burning down a house to destroy the vermin which infest it. We must consider them, however, not only as antiseptics, doing good as antiseptics, but also as irritants, doing harm to the tissues; that is, lowering their vitality and hence their resistant power, in so far as they are irritants. The question as to their utility then resolves itself into this: do they do more harm than good or more good than harm? They must do much more good than harm to be of use in curing the endometritis. If they do as much harm as good they are useless, and if more harm than good they are a positive injury and aid the bacteria in their ravages. Recalling again the etiology of the diseases under consideration and the thickness of the tissue invaded by the gonococci, it must become apparent that a surface application of these irritant and caustic antiseptics (none of them having a penetrating power beyond their caustic zone) cannot reach and destroy the bacteria in the depths of the tissue.

We are, then, by making applications of these medicaments in

gonorrhœal endometritis only adding injury to injury, lowering more and more the resistant powers of the tissue in the toils of the gonococci and their toxines. No wonder that a rapid extension of the disease takes place so frequently in gonorrhœal endometritis treated by topical applications. Remembering also that a congestion of the tubes is already present, inviting and facilitating the extension of the gonorrhœal infection into them by continuity, I firmly believe that a very large percentage of salpingitis and pyosalpinx are the result of treatment of the pre-existing gonorrhœal endometritis by applications of the commonly-used medicaments.

The following is furthermore an ever-present danger: An unmeddled recent gonorrhœal endometritis is a pure gonococcus affection. The manipulation of making topical applications introduces almost invariably other bacteria, producing a mixed infection. The application is scarcely ever made in a perfectly aseptic manner. The conversion of a pure gonococcus infection into a mixed infection changes at once the potentialities of the trouble. If the gonorrhœal endometritis was acute in severity as well as in time, the mixed endometritis produced may give rise to as severe symptoms as acute septic endometritis does. I have seen, it is true, such acute mixed endometritis occurring without any intrauterine treatment. Such an acute mixed-infection-gonorrhœal endomitritis probably never has the potentialities of an acute septic endometritis following labor or abortion, for in the latter there is possibly a vaginal and systemic infection through the lymphatics and blood vessels, while in one originating from a gonorrhœal endometritis the extension is confined to one of continuity; that is, into the tubes and thence to the pelvic peritoneuma. It is these secondarily-infected cases of gonorrhœal endometritis, which give us our worst cases of pelvic abscesses and adhesions.

Before dismissing this brief outline of the possibilities for harm from local treatment of acute gonorrhœal endometritis, I wish to say that there is considerable analogy between acute gonorrhœal endometritis and acute anterior urethritis in the male. In both, injudicious local treatment causes an extension of the infection; salpingitis, etc., on one hand, and posterior urethritis, with its possible further extension to the deeper portion of the prostate, to the seminal vesicles and to the epididymis, on the other hand. Without meddlesome local treatment neither would extend so commonly to these deeper parts.

Chronic Septic Endometritis.—In this group of endometrium infections, for the same reasons as were stated under acute gonorrhœal endometritis, topical applications can do but little good. None of the

available medicaments penetrate deeply enough to destroy the bacteria. We cannot do as much harm in this class as in the above one, for the cocci are attenuated if the infection is chronic, and the tissues have recovered from the first shock of the attack by the bacteria, and have now marshalled all their natural means of defence. An extension into the tubes or into the lymphatics is only possible if the application is made in a very dirty manner and the medicament chosen very inappropriate to the case. The harm that is always done is that we are wasting time and the woman continues to suffer. We have in the curette and repair of the cervix, if that is indicated, a rapid method of terminating the trouble. The question of time is an important one in many cases of chronic pelvic disease in women. The invalid habit is so easily acquired by women with uterine troubles. Any number of neurotic and morbid women are graduated out of gynæcologists' offices after taking a course of "treatments" for their womb. We cannot be too careful about this. It behooves a physician to cure his gynæcological patients as rapidly as possible. All tedious plans of treatment of pelvic diseases jeopardize the mental balance of the patient, just as chronic pelvic diseases themselves do.

Chronic Gonorrhœal Endometritis.—If the gonorrhœal endometritis has existed for some time it has become a mixed infection. Further, just as in the last-described form, the gonococci and the other bacteria have become attenuated and the tissues have rallied, and are making an effort to destroy the bacteria, and have at least succeeded in checking the extension of their ravages. Topical applications in this class of cases are also wholly ineffectual to destroy the micro-organisms for lack of sufficient penetrating power to act on the bacteria in the depths of the tissue involved. The irritant medicament may, however, depress the vitality of the endometrium so as to make it again a sufficiently good medium for the gonococci, which will then regain their virulence. We thereby may convert a chronic gonorrhœal endometritis into an acute one. The acute gonorrhœal endometritis so produced (acute as to possibility of extension of the infection), we must bear in mind, is an acute mixed infective one. The gonococci infect the tubes and the other bacteria follow. In this group of endometritis we may in this way, by topical applications, produce severe cases of pyosalpinx and pelvic inflammations. The treatment commonly pursued in chronic gonorrhœal endometritis is by topical applications, and a very large number of pyosalpinx cases are thereby made.

Although the scope of this paper does not include the treatment of endometritis, yet I wish to say that in all cases of chronic en-

dometritis of purely bacteriological origin, curettement is the proper treatment. Curetting the uterus removes most of the thickness of the endometrium, leaving only a thin layer of the membrane behind. Now, following the curettement, antiseptic applications may be made with the expectation of penetrating the thin layer of the endometrium left, and thus reaching and destroying all the bacteria. It is frequently necessary to curette a case several times in comparatively rapid succession, each curettement followed by several applications of strong antiseptics, the desirable ones being such as remain on or in the affected tissue for some time—hence the value of iodine and iodoform. In all of these cases it is the antiseptic applied and not the currettement which is the essential factor in the treatment. This subject is so commonly misunderstood.

Chronic Catarrhal Endometritis.—Under this heading may be brought cases of endometritis originating from diverse distant causes. In most of these cases the trouble began as a congestion of the endometrium. The congestion lowered the vitality of the endometrium, making it a tissue easily infected. We know that the cavity of a healthy uterus is sterile, and we further know that bacteria of low and high grade of virulence are abundant at all times in the vagina and cavity of the cervix. So long as the endometrium is healthy no bacteria except the gonoccoccus can become parasitic in it. If, however, the endometrium, as in this class of cases, becomes congested and its vitality is thereby lowered, saprophytic and parasitic micro-organisms can thrive in it, and an inflammation is set up. A case of congestion of the endometrium, therefore, is soon changed to inflammation of the endometrium—to a true endometritis—a catarrhal endometritis. We have, therefore, in this group, two causes at work, the distant one and the bacteria. A treatment confined to either cause will not cure. The distant causes are: (1) congestion of the endometrium, due to malpositions and adhesions of the uterus interfering with its normal circulation; (2) congestion of the endometrium, due to tumors of the uterus, annexa or neighboring parts; (3) congestion of the endometrium, due to heart, kidney and lung diseases; (4) lowering of the normal vitality of the endometrium by constitutional dyscrasias such as the anæmias, tuberculosis, diabetes, etc.; (5) lowering of the resistant power or production of a congestion, due to imperfect metabolism (lithæmia) or to deficient excretion from the body (leucomaine poisoning in imperfect intestinal digestion or deficient excretory function of the kidney).

In all of these cases topical applications can do but little and only a temporary good. Harm may be done by irritating the already

diseased endometrium and so intensifying the degree of inflammation. An immense amount of wasted effort is being expended in treating these cases by topical applications to the endometrium; a corresponding amount of disappointment falls to the physician and to the patient. The distant or predisposing causes must first be treated and if possible cured. After that is accomplished then the local condition can be treated. If the endometritis is of mild degree, proper locally-applied medicaments may be effective and sufficient.

In conclusion, it is necessary to consider as a separate group those cases of chronic endometritis of whatever origin, which are coincident with chronic salpingitis. In these cases, of course, the endometritis preceded the salpingitis. The endometritis was a severe one at one time. During the acute stage of the salpingitis and accompanying pelvic peritonitis, the symptoms of the endometritis were entirely masked by the very much more severe ones of the salpingitis. But now the symptoms due to the salpingitis have almost subsided, and those of the endometritis are demanding attention. Are these cases of endometritis to be treated by topical applications? Can topical applications do any good? May they do harm? Good they cannot do, for reasons already given. Harm and frequently very much harm can be done. The irritation and mechanical insult to the tissues, due to the local application, may and does intensify the inflammation. The already present bacteria become more virulent, and other virulent bacteria are inoculated in the diseased endometrium, being carried in during the application. As a result the endometritis becomes worse; and, worst of all, new infective material is thus introduced into the inflamed tubal cavity. The salpingitis again becomes more or less acute. This is the explanation of many so-called recurrent attacks of salpingitis or recurrent attacks of pelvic peritonitis, as it is commonly called.

In this numerous class of cases all local treatment to the endometrium must be deferred until the salpingitis has subsided, and gives but very little trouble. Then, through curettement, followed by proper antiseptic applications, is the treatment of the endometritis.

100 State St.

CURETTAGE AND PACKING THE UTERUS.*

By John Duncan Emmet, M.D.

Assistant Surgeon to the Woman's Hospital in the State of New York; Consulting Gynæcologist to St. Joseph's Hospital, Yonkers, and to the New General Hospital, Fishkill, N. Y.

Although I am fully aware that no surgical procedure has probably received more thorough discussion both in the past and in the present and although I realize that I, at least, have nothing original to add thereto nevertheless, owing to this very widespread knowledge of the operation itself and, as I shall endeavor to show, the very contradictory and incongruous ideas prevalent as to its indications, some further reflections may not come amiss.

The authentic history of the curette is of very recent date. In 1846 Recamier presented such an instrument for the removal of granulations in the cervical canal. He first applied the term "curettage" to this operation. In 1850 he modified the shape of the instrument and used it for the removal of granulations in the interior of the uterus. Simon also used for a similar purpose a spoon curette which however had a general surgical use. Later Marion Sims further modified the Recamier instrument.

Coming down to our own times, which include both the preseptic and aseptic periods, we find curettage of the uterus very generally practiced until just prior to the advent and general adoption of aseptic methods. Drainage to the degree to which it is carried out to-day certainly did not exist but an attempt was always made even in this. The operation, however, owing to its unsatisfactory results and even fatal consequences, was on the wane as early as twenty years ago. In consequence of this, Dr. Gaillard Thomas invented the dull or wire curette to obviate the great danger apparently inseparable from the use of the sharp instrument. Among the earliest opponents of the latter if not the first, and certainly its most uncompromising one, was Dr. Emmet. He, following the lead of others, especially Sims, frequently practiced this generally accepted mode of treatment but he realized, after a time, that his patients so treated were not only not benefited but became worse. This he attributed to the use of the sharp curette and referred in the early editions of his book to several fatal cases, which he had observed in the practice of others, directly consequent upon its use. He thereupon condemned the method altogether in no unmeasured

* Read before the Woman's Hospital Society, February 9, 1897.

terms and it was largely owing to this that both the curette and the operation fell into very general desuetude. But, while he condemned the instrument upon clinical grounds, he did not fail to recognize the fact that a uterus which had remained for a long time subinvoluted from parturient injuries or which was enlarged from long-standing inflammation in the nullipara, contained within its canal a condition—at that time called fungosities—the existence of which distinctly interfered with and whose removal accelerated recovery. He thereupon applied the needed counter-irritation by the use of his curette-forceps which, while not destroying the lining membrane as does the sharp curette, removed all excrescences upon its surface and, by pressure upon the whole canal, undoubtedly exercised an alterative effect. But even this much milder treatment was beneficial only in a limited number of cases, and not infrequently an increase of peri-uterine inflammation was appreciable after its use. Hence Dr. Emmet's instrument never received a very enthusiastic adoption and the profession at large came to realize that curettage was in all conditions a danger and, except for retained placental remains and for inoperable carcinoma it was, for some reason, a failure as well.

We now know why, but at that time the operation had to be judged, as all other operative procedures, upon its actual clinical effects under then-existing circumstances and not upon its possible intrinsic merits under ideal conditions. The condemnation, therefore, of the sharp curette was just and logical—as just and logical as is its re-adoption now. For in this era of asepsis, what was the ideal of the past is the fact of to-day and, with our present control of necessary but extraneous conditions and surroundings, all surgical measures may and should be judged in regard to their inherent worth alone. This is an important distinction to bear in mind, for we are all apt to hear frequent condemnation of former methods of practice by men who are too prone to judge of the motives of the past only in the light of our present experience.

The chief credit for the revival of curettage and drainage, at least in the sense of popularizing it, and altogether for its present perfect technique, undoubtedly belongs to Dr. William M. Polk. His first paper on the subject appeared in 1887 and he has frequently urged and referred to the subject since that date. It was enthusiastically adopted and quickly came into such general use that it is to-day probably the most frequently-performed operation in this country. Dr. Polk insisted upon the importance of combined packing and drainage of the uterus.

I wish to state here that the use of the curette and subsequent

draining of the uterus is universally recognized as the best and most efficient agent at our command for the cure of the acute onset of every form of sepsis, for retained placental and other post-partum remains and for the relief of inoperable carcinoma. I wish, therefore, to eliminate these conditions from the further consideration of this subject and to ask that they be excepted from whatever limitations and strictures I may place upon the use of curettage and drainage, as this paper advances.

I have hitherto spoken of this operation simply as a surgical means replaced at our disposal, but its chief significance, in the understanding of Dr. Polk and in that of the vast majority of its present supporters, lies in the claim that it is curative of *endometritis.*

Endometritis is defined as an inflammatory disease, *per se,* of the lining membrane of the uterine canal. Its origin is by extension through the vagina, extension through the tubes or by the introduction of septic matter by means of the lymphatics. Its clinical symptoms are uterine "leucorrhœa" and enlargement, with tenderness in and around the uterus. So closely was the revival of the use of the curette and drainage associated with the doctrine of the superlative frequence of endometritis that the latter was accepted with an unquestioning enthusiasm. This result was not surprising, for the inducements towards its adoption were many. In the first place, it simplified the practice of gynæcology to a wonderful degree, it eliminated the necessity for long and tedious local treatment, it obviated the necessity for special training in plastic work, it relegated the specialty largely into the hands of the general practitioner and promised a speedy cure, by means of a very simple procedure, for all symptoms which could not be removed by the surgeon's knife.

In the popular medical mind to-day the use of the curette implies a belief in the doctrine of endometritis as the *fons et origo*—the foundation-stone in fact—of the diseases of women. Yet this is neither just nor true. Although I value highly the operation of curettage and frequently practice it, strictly according to the rules laid down by Dr. Polk, I have always denied that endometritis was an important or even a common factor in inflammatory diseases of the pelvis.

If we consider endometritis in its acute form as a primary and independent disease, as its advocates claim it to be, we would expect some evidences of *distinct* inflammation in the endometrium itself; yet we never find this but the whole uterus as well as the peri-uterine tissues show equal evidences of inflammation. In acute endometritis, therefore, it is pure assumption to claim that the metritis and peri-metritis are secondary diseases in regard to it. In

chronic endometritis, as it is called, pathological conditions external to the canal are still more easily recognized and are invariably found, so the same argument holds good as in reference to the acute form. But although, as I believe, endometritis as a distinct disease, is rare, the endometrium has the power of very rapid and thorough absorption. Hence, it is through and by means of this membrane, undoubtedly, that septic material and irritating substances which reach the canal are frequently carried into the body of the uterus and to its annexa and ligaments, where they cause an inflammation of more or less extent and distinctive character. The endometrium, from its anatomical connection with the uterus, must likewise become involved but this involvement is a secondary one always in importance. If the uterus were an open cavity, like the œsophagus or trachea or even the vagina, it would be comprehensible that the easy entrance of irritants from without would produce the same pathological conditions and present the same indications for treatment as do all organs lined with mucous membrane. But this analogy does not exist in regard to the uterus. This organ in the nullipara at least, in whom so-called endometritis is of frequent occurrence, is efficiently closed against the intrusion of disease from below, except by extension by direct continuity from the vagina. The other means of infection must be through the tubes above or from the lymphatics which enter it from other organs. But when a vaginitis extends to the endometrium we immediately have a metritis as, for example, in gonorrhœa and, when the inflammatory excitant reaches this membrane by way of the tubes or the lymphatics, the involvement of the endometrium must, of necessity, be secondary to that of the organs from which the septic material came.

These facts go to show, in my opinion, that it is far more reasonable to believe that the symptoms classed under the head of endometritis are due either to an inflammation of the body of the uterus or to one which has originated in the ligaments, annexa or peri-uterine connective tissue, by which an interference with the normal blood supply of the uterus has taken place.

What is more probable than that this organ should endeavor to rid itself, by means of its glands, of the stasis in its venous circulation? And this is my belief. I consider uterine "leucorrhœa," the pathognomonic mark of endometritis, to be nothing more, in the majority of cases, than a symptom of some form of inflammation external to the endometrium, and usually external to the uterus as well, and as significant alone of an effort on the part of Nature to find relief from a blood stasis. That is the correct view of this sub-

ject receives clinical confirmation from the experience of most of us, who have constantly cured completely all the symptoms ascribed to this supposed disease by applications of astringent drugs to the vaginal vault alone, without ever entering the uterine canal. It is hard to understand how a discharge from the uterus, if it were due to and dependent upon an inflammation of the endometrium, could be entirely cured by a few weeks' application of iodine and glycerine to the posterior fornix of the vagina! Yet this is the daily experience of many of us.

When the uterus, the annexa or the uterine ligaments have been the seat of inflammation, whether peritonitis, lymphangitis or cellulitis, or have been affected by the products or remains of these, or by the presence of new growths, for a considerable time—in fine, if there has long existed any condition in the pelvis by which the uterus has suffered from an abnormality in its blood supply—there will arise a change in the condition of the endometrium itself. There will be an increase in its cell elements and the action of its glands will become seriously affected. That this condition is not an inflammatory one is clear from the fact that it is not accompanied by rise in temperature nor increase of local heat or tenderness. It is analogous to that condition found in other tissues in the immediate neighborhood of any long-standing inflammation—a simple increase and proliferation of the connective tissue cells. When this occurs in the endometrium, we will find that the improvement in our patient's condition becomes slower and the case becomes soon a tedious and discouraging one. It is in such cases, I believe, the sharp curette and packing are of greatest value. Their thorough use at this time will be productive of remarkable and permanent results. There is an immediate improvement, the leucorrhœa ceases, the uterus becomes smaller, the local and reflex subjective symptoms subside and the general health improves. The patient frequently considers herself cured and this opinion is shared in by the medical attendant, if his ideas of gynæcological pathology be confined to pus cavities, new growths and endometritis. Yet I can truthfully say that, with large opportunities for observation both in my own practice and in that of others, I have never seen a case *cured* by curettage, unless in those diseases already excepted in the beginning of this article, viz.: retained placenta or secundines, acute sepsis from operative interference and the like or in acute gonorrhœal infection. The symptoms have always steadily returned, after a greater or less interval, when local treatment has ceased with the curetting.

In the records of the Woman's Hospital for the year 1893-4, which I was able to use, owing to the courtesy of four of the attend-

ing surgeons, I found the references to this operation and its indications absolutely worthless for statistical purposes. This is due, principally, to the fact that the operation was, except in the service of Dr. Emmet, generally combined with plastic operations or laparotomy and always with more or less local treatment. In the combined services of Dr. Emmet, Dr. Cleveland, Dr. Hanks and Dr. Bache Emmet, the operation was recorded but 114 times. Of this number endometritis was the diagnosis but 25 times. In one case, however, this diagnosis was an avowed error; hence the total should be but 24. The operation was performed for endometritis *alone* but 6 times, with 2 cases cured and 4 improved. Of the other 18 cases of this diagnosis, it was combined with numerous other forms of disease, among which were all forms of uterine displacements, diseased conditions of the ovaries and tubes and menorrhœa. Of the 90 cases of this operation in which the diagnosis of endometritis does not appear, 7 were for retained placenta, 3 for abortion, 8 for metrorrhagia, 8 for menorrhagia, 7 for uterine fibroid, 2 for mucous polypus and 3 for carcinoma; total, 38. In the remaining 52 cases the operation seems to have been performed merely on the principle, now so generally accepted, that the interior of the uterus is a species of cess-pool which should be cleaned out at every opportunity.

On the subject of endometritis the pathologists are strangely silent. They have either tacitly permitted the assumption by gynæcologists that all pelvic inflammatory disease had the uterus for its origin, merely because simple endometritis *does* occur, or the subject has been ignored entirely by these experts in regard to its true position in gynæcological pathology.

It must be of great interest to hear the dicta upon this subject of one of the world's greatest pathologists. Some two years ago I wrote to Professor Welch, of the Johns Hopkins University, asking him to give me categorical answers to certain propositions in regard to endometritis. At that time, I was exceedingly doubtful as to existence of *simple* endometritis, *i. e.*, as an independent and primary affection, not traceable to direct extension from the vagina of septic inflammation. Dr. Welch's statement to the effect that this simple form of the disease may and does occur was of course accepted by me as final. I am none the less convinced, however, but much strengthened, by the weight of his authority, in my belief that endometritis, unless it occurs as a sequela of inflammatory diseases outside the uterus, in the peritoneum or in the connective tissue of the broad ligaments, or as an extension by continuity of a septic process of the vagina, is a very rare condition. It is not credible that a uterus having all the symptoms, subjective and objective, which are

held by the strongest advocates of endometritis to be pathognomonic of this disease, can be entirely cured of all symptoms and even be restored to a completely normal condition by persistent local applications to the vault of the vagina, by the proper use of pessaries and by indicated plastic operations, without ever entering the cavity of the uterus. Yet that these results have been obtained thousands of times, wherever there was no complication of organic disease of the appendages, is well known to all of you and, whatever may have been the personal experience of individual members of this Society or their impatience in the matter of results, these facts in the experience of others cannot be gainsaid.

A word with regard to packing and to draining the uterus after curettage. The two procedures are, I believe, practically contradictory. If the uterus be properly packed, it cannot properly drain. This fact is, I think, very generally acknowledged to-day. From the statement of my belief as to the indications for curettage and as to the infrequency of endometritis, properly so-called, it will be seen that only in those conditions which are the immediate effects of the puerperium, in septicæmia from traumatism or in conditions of specific inflammation by continuity, as in gonorrhœa, do I consider drainage indicated. I have never met with a case of simple, uncomplicated endometritis. In such a case, however, I would also drain. In all other cases where I curette, I do so, first, in order to change the character of the endometrium and to enable its glandular structure to recover its normal anatomical and functional condition; secondly, in order to effect a local blood-letting for its immediate effect upon the peri-uterine circulation; thirdly, I pack the uterus (after thoroughly removing all débris and applying a powerful styptic) in order to produce a counter-irritant effect upon the endometrium itself and upon the pelvic circulation outside the uterus.

I append the notes by Dr. Welch, to which I have referred. They were in answer, as I have said, to a number of categorical propositions which I sent him upon this subject. They explain themselves. It will be seen that Dr. Welch does not attempt to decide the question as to the frequency of endometritis, especially in its simple form, *i. e.*, where it begins as a primary and uncomplicated inflammation of the lining membrane of the uterine body. He does, however, point out two facts which are confirmatory of the essential points of my contention in regard to what is popularly considered to be endometritis. These two points are: That all the symptoms considered pathognomonic of primary endometritis, even the "leucorrhœa," if examined macroscopically, may be equally caused by a

peri-uterine inflammation or an extension from such a source; that many conditions of the endometrium which are classed as endometritis, such as endometritis atrophica, hypertrophica, glandularis, and polyposa are, by many authorities, not considered to be endometritis at all but conditions due to long-standing congestion of the uterus, *i. e.*, interference with the uterine circulation (see Proposition C.) This is as far as a pathologist can go in this question, for the differential diagnosis of simple and primary endometritis is practically a clinical one, of which the pathologist rarely has the opportunity to form an independent judgment. The support of pathologists can be merely negative on either side of this clinical question, and therefore I cannot refrain from denouncing the methods of many of the very fervent advocates of the theory that endometritis is the beginning and end of all gynæcological disease, who have ranged, without authority and with assertiveness, the names and excerpted statements of all the luminaries of pathology as pawns in front of their theory to bolster and protect it.

Notes by Prof. Welch on Endometritis.

PROPOSITION A.

"Doubtless symptoms which are often attributed to endometritis are in reality due to other lesions, such as affections of the uterine wall outside of the mucous membrane and of the peritoneal covering of the uterus and adjacent parts, and affections of the uterine adnexa and disturbances of the circulation such as you enumerate. Uterine enlargement and peri-uterine tenderness would seem to indicate something more than or different from an uncomplicated or simple endometritis. A leucorrhœal discharge, if really derived from the cavity of the body of the uterus, and if containing, as is customary, pus cells, would certainly indicate genuine inflammation of the uterine mucosa; in other words, an endometritis. I do not understand, however, that a leucorrhœal discharge has always this source, so that its presence does not of necessity indicate endometritis.

PROPOSITION B.

"The term "leucorrhœa" is, in my opinion, somewhat indefinite, and may be applied to discharges of different compositions and of different origin. A leucorrhœal discharge may be very rich in pus cells, be genuinely purulent, or it may contain comparatively few pus cells. The quantity of mucus, red blood corpuscles and epi-

thelial cells present in it varies within wide limits, and especially the number and kinds of bacteria present vary. A leucorrhœal discharge is indicative of inflammation of some part of the genital tract, between the tubes and the vaginal outlet, but the exact seat of the inflammation varies in different cases. It may be due to various causes, chiefly pathogenic micro-organisms, of which the best studied are the gonoccoccus and streptococci. I have no doubt that disturbances in the endometrium, induced by changes in the uterus itself or secondary to lesions external to the uterus, favor the lodgment and growth of these pathogenic micro-organisms. I should consider it an important matter to make clear the influence of these various accessory causes seated outside of the uterus in predisposing the endometrium to inflammation by the invasion of micro-organisms which might do no harm at all were it not for these underlying disturbances. Passive congestions or blood stasis are doubtless among these accessory, underlying causes, but there are others. Much can be said in favor of the view that inflammation is a weapon used by nature to combat micro-organisms. While recognizing, therefore, that there is much truth in your views that leucorrhœa, while itself a sign of superficial inflammation of some part of the genital mucous membrane, is often dependent for its existence and persistence upon causes more deeply seated and often outside of the uterus, I should not be willing to bring all cases under this category. Some are doubtless simple and uncomplicated inflammations of the mucosa of the uterus; that is genuine endometritis. This is true not only of puerperal and gonorrhœal cases, but of some other cases which I have examined microscopically.

PROPOSITION C.

"(*a*) There may be serious lesions in the pelvic organs and tissues, including such as must interfere with the circulation of blood in the uterus, without demonstrable alteration of the endometrium. Nevertheless, such interference with the circulation and certain other conditions, as, for example, uterine myomata, are likely to induce various changes in the endometrium of a non-inflammatory character, as well as to favor the occurrence of inflammation.

"(*b*) While I have seen cases of genuine inflammation which can be called nothing else but endometritis, it is true that much which passes under the name of endometritis is not an inflammation at all in the ordinary acceptation of the term inflammation. Many cases of so-called endometritis are characterized chiefly by non-inflammatory alterations of the glands, such as new growth of the glands,

atrophy of the glands, cystic dilatations, etc. These glandular alterations may be accompanied by non-inflammatory lesions of the stroma, such as hyperplasia, formation of lymphatic tissue, fibroid transformations, etc., or there may be very little change in the stroma. Such terms as endometritis hypertrophica, e. atrophica, e. polyposa, e. glandularis, refer mainly to alterations which many good pathologists refuse to regard as inflammatory."

I gladly take this opportunity to express publicly my sense of obligation to Professor Welch for his painstaking response to my inquiries. His indefatigable devotion to scientific truth, his unflagging interest in every branch of medicine and his unfailing courtesy and unselfishness are proverbial with all who have the privilege of his acquaintance.

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EDITORIAL.

MEDICAL CHARITY: ITS ABUSE AND USE.

The importance of this subject has acquired fresh accession from the announcement, recently made in the public press, of a donation by Mr. J. Pierpont Morgan of one million dollars for the building and equipment of a huge lying-in hospital in this city. Unstinted praise is due the courage—for it seems to require courage in the very rich to part with a large sum of money—and the generosity of the donor while, as a too-rare example of unselfish public munificence, his giving is worthy of our profoundest admiration. And yet we dare say that, at this announcement, every thoughtful medical man in this community, except those personally interested in the proposed new hospital and clinic, asked himself the question: Will it be a curse or a blessing—not merely to the medical profession but to that very class it is intended to benefit, the general public?

Mr. Morgan, judging from all his public acts, belongs to that class of philanthropists, of which Mr. Andrew Carnegie is the best-known type, who do not believe in that form of charity which is tersely expressed by the term "indiscriminate." He has been connected prominently only with those institutions and associations, whose motto is: "We only help those who are at least willing to help

themselves" and in whose eyes the professional begger, even though poor, is ethically a criminal. Yet we regret to say that if the institution which he has founded is not radically different in its management from all other public hospitals and clinics, similarly endowed, it will principally support and encourage the very class of professional beggars—not poor, indeed, but rich ones—to whose suppression he has devoted both his energies and means.

If one million dollars is to be the full extent of Mr. Morgan's donation, now and hereafter, to this institution, and if the plans and scope of the building, as outlined in the newspapers, are really put into execution, this enterprise will simply become another intolerable burden upon the mass of the medical profession of this city and vicinity, who already find it almost impossible to earn honestly their daily bread, owing to the competition of just such institutions already established. It will be obliged to become self-supporting, which means that it will and must accept, for free medical attendance, all patients who are willing to pay for their board and lodging. It has been further announced that the Medical Board of this new hospital will be supreme in all that relates to medical matters and that the lay Board of Governors will exercise authority only over the business affairs of the institution. Unfortunately, this fact does not alter the situation in the least; in all our hospitals the same arrangement exists, to a greater or less degree practically, in theory absolutely. Yet medical interests are never permitted, if possible, to interfere with their "business" interests. Let us bring the significance of this fact a little more clearly before our readers. We assert, without the fear of contradiction, that there is not one hospital in this city, under lay management, which would hesitate to accept as a free patient (so far as medical attendance is concerned) any member of the Astor or of the Vanderbilt family—and we mention these merely as prototypes of extreme wealth—if he or she applied for the highest priced room and board. As a fact, our hospitals today contain many patients ranging from those who are wealthy to those in moderate circumstances—all, indeed, who apply—and these must receive, so long as they remain inmates, medical attendance and operative assistance *gratis.*

We know and could quote many instances of this kind which have come under our own personal observation. *The question: "Are you not able to pay a physician for his services?" is never asked by the authorities of these hospitals and clinics, no matter what evidence may obtrude itself in regard to such ability at the time of application for admission.*

Under these circumstances, then, this proposed new hospital, like

the others, though to a much greater degree, will make a bid for patients irrespective of their right to medical charity; it will encourage that growing class of shameless beggars, the well-to-do hospital free patients, who are rapidly teaching the lay public to look upon our profession with contempt as "easy fruit," to use the expressive college slang of the day. The usefulness of such an institution is far exceeded by its abuse. Its philanthropy becomes a farce; its charity, a sham.

If Mr. Morgan really wishes his gift to be a blessing to the community instead of a curse to the many struggling, almost starving members of our profession, a true charity instead of an inducement to fraudulent beggary; if he wishes it to stand as an evidence of his good stewardship of the wealth with which he has been blessed instead of a mere monumental receptacle for his graven name, at which the indifferent and the curious will stare, he must further endow his hospital in perpetuity to such an extent that it will forever be independent of any source of revenue from patients. Then let its wards be absolutely free of all charges—of board, lodging, nursing and medical attendance. But let there be a *proviso* that to these free wards no patient shall be admitted who cannot prove inability to pay a moderate fee for medical attendance elsewhere. The difficulties of such a course are less real than apparent. God knows it should not be difficult to fix upon what should be a "moderate fee," when alumni of our best hospitals, men thoroughly equipped in intelligence, knowledge and experience—and there are many of these, both old and young—are glad to treat patients, even in the specialties, for *one dollar and two dollars a visit*! The difficulty is that many can barely get enough patients even at this rate to feed themselves and pay their rent in a respectable neighborhood. For this state of affairs the so-called charity (sic) of our public hospitals and clinics is directly and mainly responsible. The "detective service" necessary to discover whether a patient is really incapable of paying the "moderate fee" is also not so difficult. It has been successfully carried out by the Charity Organization of the City of New York for the past fourteen years and we doubt if, of the two hundred thousand families and upwards which have applied for relief, many have obtained it who were not in need. To come nearer home, we rarely hear from the hospitals that patients are admitted to cheaper wards than their means allow them to pay for. There seems, indeed, little difficulty in determining the full amount which patients can pay for their board and lodging!

In an equal degree does all we have suggested apply to the new clinic which will be attached to Mr. Morgan's proposed hospital and

to its outdoor visitations. It is both right and expedient that private rooms should be provided in this institution, but the cost to patients should be a high one and the attending physicians should be at liberty to charge whatever fee they desire.

Mr. Morgan has here the choice of providing a noble and enduring charity for this community or of merely adding another "rich man's whim" to our already over-supply of unnecessary hospitals.

In an editorial in the April issue of this JOURNAL we pointed out to the New York County Medical Society the futility of any effort at counteracting the prevailing abuse of medical charity, unless it compelled harmony and concert of action in *all* the hospitals and clinics within its jurisdiction. We then merely insisted upon the exclusion from our institutions, as free patients, of all those who were capable of paying for medical attendance elsewhere. In the editorial this month, we have suggested a feasible plan by which this result might be obtained. If all institutions be compelled, *by the concerted action of their Medical Boards*, to use due diligence in determining whether an applicant for medical charity is worthy of it and to refuse admission wherever such is found not to be the case, our hospitals will cease to be the charitable frauds which now, for the most part, they are.

It is with the greatest pleasure that we notice the earnest and convincing manner in which this subject of hospital and dispensary abuse has been taken up by the medical press generally throughout the country. Among others, and without any desire to draw invidious distinctions, we have especially noted the recent powerful editorials in our esteemed contemporaries, *The Medical News*, *The Columbus Medical Journal*, *The Fort Wayne Medical Journal-Magazine*, *The Cincinnati Lancet-Clinic* and *The Philadelphia Polyclinic*. With a medical press united and persistent in exposing and denouncing this outrage success is a foregone conclusion, whatever the odds arrayed against us.

IN MEMORIAM: DR. LEONCIO ROS.

On the afternoon of April 29, Dr. Ros, assistant house-surgeon at the Woman's Hospital, in this city, was handing instruments to the operating surgeon during the first of two laparotomies appointed for that day. Realizing that the supply of sterilized catgut was running short, he waited until the operation was almost at an end and, taking that opportunity, ran across the yard to the pharmacy

of the hospital, a small detached building about thirty yards from the operating pavilion. Placing a sauce-pan of boiling water upon a gas stove, he emersed in it a glass jar, half full of alcohol and tightly sealed, in which the catgut was to be boiled under pressure. As soon as this was accomplished, Dr. Ros raised the jar of boiling alcohol out of the water, in his haste neglecting to extinguish the gas-flame. Suddenly the jar exploded and its contents, immediately igniting, enveloped the doctor in flames. He was thinly clad and covered with a cotton operating-gown, and his garments were soaked by the boiling alcohol, even as it caught fire. In his agony, seeing no assistance at hand, Dr. Ros rushed into the yard and to the operating pavilion. When he burst into the presence of the horrified house-staff and spectators his clothing had been burnt off to the waist, and the cuticle of his face, trunk and arms was hanging in large flakes. He was quickly extinguished and put to bed, where morphine and topical dressings were applied. Twelve hours later he died. Though relieved of pain he retained consciousness till the last and bore his fate, which he realized, with remarkable and admirable fortitude.

Dr. Ros was but twenty-six years of age and had nearly completed one year of interne service at the hospital. Of fine physique and splendid health, of more than ordinary intelligence and quick perception, honest, good natured and possessing great charm of manner, his life held the promise of the brightest and most successful professional career. From his boyhood he had practised for his amusement slight-of-hand and had acquired such facility in this art that he could have easily ranked with the greatest professional performers. The dexterity, certainty and ease of manipulation which his fingers had thus acquired assured his success as a remarkable operator, especially in plastic gynæcology.

The sad realization of his loss by his many friends, admirers and well-wishers is intensified by the fact that his life was unnecessarily sacrificed and his death a needless tragedy. For years the house staff have been expected, in the Woman's hospital and doubtless in many other surgical hospitals as well, to prepare catgut ligatures by boiling in alcohol under pressure. All the methods employed, of which this one was the latest and the worst, were exceedingly dangerous to life. A number of explosions have occurred but hitherto with but minor casualties.

It seems to us that if catgut must be used for surgical purposes and its preparation is attended with so much danger, hospitals should be compelled by law to have it prepared by competent persons whose business it is to take such risks.

It is altogether unjust that hospital internes, without experience and with the carelessness of youth, who moreover give their services gratuitously, should be compelled in the midst and hurry of onerous duties to risk their lives by experimenting in explosives. If there be no reliable source from which prepared catgut can be obtained, it is better that we dispense altogether with its use until our confidence in the manufactured article becomes restored.

It is our expectation and hope that the tragedy of Dr. Ros' death may be a warning to other hospitals, where such dangerous experiments are imposed upon the house-staff, and that unnecessary sacrifice of young and valuable lives may thus be obviated.

REVIEW.

Lectures on the Treatment of Fibroid Tumors of the Uterus, Medical, Electrical and Surgical. By FRANKLIN H. MARTIN, M.D., Prof. of Gynæcology, Post-Graduate Medical School of Chicago, etc., 12mo. Pp. 174. Illustrated. Chicago: W. T. Keener Company, Publishers.

This neat little book deserves more than mere mention. As the title indicates, it pays particular attention to the treatment, yet it contains a very good resumé of the pathological anatomy, symptoms and diagnosis as they are taught to-day.

Lecture I. describes uterine fibroids, their minute anatomy and the degenerative changes to which they are liable. Dr. Martin very properly makes the distinction between interstitial and intramural fibroids. The word intramural refers to the location of the tumor, and is a topographical term, while interstitial designates the relation of the tumor to the structure of the uterus, and is a pathological term. According to Martin the interstitial fibroid "is uniformly distributed throughout the body of the uterus, without any large distinct nuclei of development." It is the writer's observation that these diffuse interstitial developments are quite rare, and are either the pure myoma or the adenomyoma of von Recklinghausen.

The lecture on diagnosis is excellent, although we should have been glad to see a note of warning to the student and practitioner, to whom this book is to serve as a "mirror of the present status of treatment," with regard to the danger of infecting the endometrium and tumor by the sound used without a speculum.

Lecture three gives an extended description of the palliative treatment by drugs, most of which, as the author frankly recognizes, are more for the comfort or temporary welfare of the patient than for any curative action.

In lecture IV. ergot receives the attention which it deserves but which is not always accorded to it in these days of operative facility.

Dr. Martin uses electricity, "with frequent exceptions in individual cases," for bleeding fibroids in women approaching the menopause, in incipient fibroids in women over forty years of age, in interstitial fibroids with no symptoms but hemorrhage, and in

those who cannot or will not be operated upon. The description of the technic is masterful and complete.

The preparations for operations leave little to be desired.

The author's method of ligature of the uterine arteries is fully explained and sanguinely recommended in certain selected cases. His experience with thirteen cases from November, 1892, to February, 1895, is given.

Removal of the appendages for fibroids is given the faint praise it deserves, and is dutifully described.

Martin, following the French school, favors the use of forceps in vaginal hysterectomy for fibroids, but does not give ligatures the consideration they merit.

Abdominal hysterectomy is described historically and technically, and forms an admirable conclusion to an admirable book. Were it not somewhat out of place the writer would mention that some injustice to his present manner of operating is done, by describing his *old imperfect* method of vaginal fixation as if it were the present completely developed one.

H. T. Byford.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY.

A yearly digest of scientific progress and authoritative opinion in all branches of medicine and surgery, drawn from journals, monographs and text-books of the leading American and foreign authors and investigators, collected and arranged, with critical editorial comments by J. M. Baldy, M.D., C. H. Burnett, M.D., Archebald Church, M.D., A. H. Cleveland, M.D., C. W. Cutter, M.D., J. C. Da Costa, M.D., W. A. N. Dorland, M.D., L. A. Duhring, M.D., V. P. Gibney, M.D., H. W. Gibney, M.D., H. A. Griffin, M.D., John Guiterus, M.D., C. A. Hamann, M.D., H. F. Hansell, M.D., W. W. Keen, M.D., B. C. Hirst, M.D., E. F. Ingalls, M.D., H. Leffman, M.D., H. G. Ohls, M.D., H. T. Patrick, M.D., William Pepper, M.D., W. Reber, M.D., David Riesman, M.D., Louis Starr, M.D., Alfred Stengel, M.D., G. N. Stewart, M.D., Thompson S. Westcott, M.D. Under the general editorship of George M. Gould, M.D. Published by W. B. Saunders, Philadelphia.

After the cordial reception given the American Year Book of 1896, any comment as to the purpose and scope of the work would be superflous. Its plan and execution meet a clear professional want, and its position is already assured. A few changes have been

made in some of the various departments, but in each instance the vacancies have been filled by men as equally eminent in their special work, while in the main the editorial staff remains the same.

The activity of scientific investigation and progress, and the tremendous quantity of the literature to be reviewed, sifted, and judicially pronounced upon, necessitate a most careful choosing and condemnation—a labor which only unselfish and enthusiastic workers can accomplish. Special training, experience, and ripe judgment is required to select what seems promising and worthy of trial or of further consideration, and so the generous loyalty of those in charge of the various departments cannot be too highly appreciated by those who make use of their work. One of the most noteworthy and useful features of this volume consists in the brief recapitulations of the trend and results of the year's work, preceding each article, while not neglecting the more peculiar and theoretic researches, the needs of the active and practising attention has been considered first, and most important and greater attention has been paid to the practical and clinical aspects of medicine. Another distinctive characteristic of the present volume is the plan of pronouncing editorial judgment upon new proposals and investigations presented during the year. This feature will tend to make the book of still greater value to those whom the excessive demands of practice leave little time to investigate and settle matters of controversy and doubt, and who will therefore be glad to have the opinion of those whose opportunities and experience have put them in a position to give these matters careful consideration. This volume is profusely illustrated with numerous half-tones and colored plates.

F. R. N.

PELVIC HÆMATOCELE.*

NEW YORK, March 20, 1897.

To the Editor of The American Gynæcological and Obstetrical Journal.

SIR—In the discussion at the meeting of the Philadelphia Obstetrical Society, held on January 7, 1897, on Dr. C. P. Noble's paper on "Vaginal Incision and Drainage of Suppurating Hæmatoceles, due to Ectopic Gestation," published in the March number of this journal, I find on page 344 the following statement by Dr. Noble:

"I quite agree as to the infrequency of hæmatocele except when caused by tubal pregnancy. I have never seen a hæmatocele caused in any other way, although I would not deny that an intra-abdominal vessel might bleed from other causes, especially from traumatism."

I am entirely of Dr. Noble's opinion as regards the first part of his statement. But I have recently had the opportunity to observe a case of pelvic hæmatocele which was certainly not due to the rupture of an ectopic pregnancy, and I have also during the past winter seen two instances of extraperitoneal effusions of blood (pelvic hematoma) which occurred independently of gestation, either normal or ectopic. It is the object of this communication to report these in my experience at least rare occurrences.

CASE I. *Pelvic Hæmatocele occurring independently of Ectopic Gestation.*

L. H., twenty-seven years, married five years, never pregnant, consulted me on February 18, 1897, for sterility. I found uterus and appendages normal, except that the cervix was long and slender, and the external os exceedingly small. Careful sounding showed the uterine cavity to be of normal depth and width. Patient had always menstruated regularly without pain. Last menstruation two weeks before. Some thin uterine discharge. I advised discission, dilatation, curetting and gauze drainage (the usual routine treatment for such cases), and referred her to Dr. L. J. Ladinski.

On March 3 I was asked by Dr. Ladinski to see the patient at her home. Nothing whatever had been done to her. She stated

* NOTE.—This communication was received too late for insertion in the April number.—EDITOR.

that she began to menstruate at her regular time four days previously. It was a wet, cold day, and she happened to get thoroughly wet and chilled, but still continued about her household duties. Menstruation suddenly stopped, and on the next day she was seized with a violent pain and pressure in the rectal region which obliged her to go to bed. Not improving, she sent for Dr. Ladinski, who saw her on the morning of the fourth day, and found a tense, fluctuating tumor directly behind the uterus, which was pushed well up toward the pelvic brim. This mass could also be felt very plainly per rectum. There was only a very slight rise of temperature. He suspected hæmatocele, and asked me to see her the same afternoon. I confirmed his opinion, and advised an operation in order to verify the presence of blood, which was done by the doctor on the next day, and the diagnosis confirmed. As there was no urgency, the blood was not evacuated, and I am informed that the mass has become hard and smaller, the blood evidently becoming absorbed.

In this case I can positively assert that there was no evidence whatever of pregnancy, the uterus on February 18 being of normal depth and size, nor was there anything else wrong in the pelvis. After feeling perfectly well for ten days, menstruation began, was suddenly checked, and a retro-uterine pelvic hæmatocele is found.

The cause of the hæmorrhage would naturally be sought in the rupture of a blood vessel, probably a varicose vein (which we all have frequently seen in the tubes and broad ligaments during cœliotomy) or of an unusual amount of bleeding from the Graafian follicle during ovulation at the sudden checking of menstrual congestion. Such an assumption does not seem to me at all strained. The wonder is only that such cases are not more common. But I confess that this is the only one I can recall in which this cause and effect appear to be perfectly clear.

Case II. *Sudden Formation of a large Pelvic Hæmatoma (Extraperitoneal) following curetting.*

C. B., married, thirty years of age, five children, was admitted to Mount Sinai Hospital on December 25, 1896, for menorrhagia dependent on endometritis. After examination I directed the house-surgeon to curette her, which he did under anæsthesia on the 27th. On passing through the ward on the 29th, I heard the patient groan and inquired about her. As the report was simply "curetted two days ago," and the temperature and pulse were normal, I did not examine her. On the 31st, however, I was informed that a "swelling" had developed in the lower part of the abdomen, and on inspection, I found an easily-visible protuberance in the left iliac

fossa, and on vaginal examination a decided bulging of the left vaginal vault. I diagnosed hæmatocele, and ordered ice to the abdomen. As the swelling had not diminished, perhaps even increased, on January 3, I deemed it best to open the sac, evacuate its contents and pack the cavity with iodoform gauze. This was at once done, through a free incision per vaginam, and fourteen ounces of fairly fresh blood was evacuated. After a somewhat protracted canvalescence the patient was discharged cured. On February 4, a careful examination with the finger in the blood cavity showed me that it was distinctly extra- and retroperitoneal.

Exactly how the curetting produced this effusion of blood I do not pretend to explain.

Case III. *Extraperitoneal Hæmatoma following Curetting. To suspicion of Extra-uterine Pregnancy. Free Vaginal Incision, Drainage, Recovery.*

E. S., twenty-eight, married, no children, was admitted to Mount Sinai Hospital on January 6, 1897, for metrorrhagia and pelvic pain persisting since a curetting performed outside on December 26, 1896. A tense fluctuating mass was felt behind the uterus, extending halfway down the recto-vaginal septum. The aspirator needle showed dark blood, and about twelve ounces of the latter was evacuated through a free incision. A rubber drainage tube was inserted, but as the cavity refused to close after two weeks of steady irrigation and drainage, I dilated the opening and curetted the cavity, which manipulation was followed by an attack of acute pelvic peritonitis, and the formation of an abscess in the left side of the pelvis. Finding that the appendages on both sides were involved in the inflammatory process and imbedded in adhesions, I chose the abdominal route for operation, and after opening the abdomen found a large abscess on the left side which I drained into the vagina. The right appendages were so adherent that I left them intact. After a somewhat tedious convalescence the patient made a perfect recovery.

New Yorker Medicinische Presse—Fälle von Grossen Extraperitonäalen Beckenhämatom, geheilt durch Vaginale Incision und Drainage.

In this last case a free incision through the vaginal roof would have answered the purpose of evacuating and draining the abscess better than the abdominal incision. But I did not know this beforehand. It was one of those cases in which the choice between the abdominal and vaginal route seems to me difficult, and when in doubt (that is, when it seems doubtful whether all that may need to

be done can be accomplished safely through the vagina) I have always preferred to open the abdomen first, and if then necessary, add the vaginal incision, as was done in this case.

As regards the evacuation per vaginam of intrapelvic effusions of blood, whether intra-peritoneal (encysted, of course, by adhesions) or extraperitoneal, whether due to rupture of an ectopic sac or not, I would beg to say that as long ago as December, 1885, I practiced the same method as that advocated by Dr. Noble, and have continued to do so in many cases ever since. In the two cases then reported the effusion was not purulent. But the decomposition of the blood and the consequent addition of the septic element would, of course, only increase the indication for a speedy and free evacuation of the blood through the vagina.

The present method of making a large incision and thus securing better drainage in these cases of encapsulated pelvic hæmatocele and hæmatoma and in pelvic abscesses (both intra- and extraperitoneal) pointing into the vagina, is unquestionably a great improvement on the old plan of puncture and small incision, with imperfect drainage, a probable premature closing of the opening, refilling of the sac and the necessity for a second operation.

Paul F. Mundé

20 West 45th St.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, March 19, 1897.

The *Vice-President*, HENRY P. NEWMAN, M.D., in the Chair.

Urethral Dialtor.

Fig. 1.

Dr. HENRY T. BYFORD: This new dilator is all in one piece. It is slightly tapering, and will dilate the female urethra sufficient to enable one to introduce the urethral speculum or cystoscope, or even, if necessary, the finger. It tapers from No. 10 to No. 50 French scale. The reason I had this model made was that I noticed in dilating the urethra the meatus is smaller and more resistent than the deeper portion. When the meatus is dilated sufficiently by a slightly tapering sound, the rest of the urethra, being elastic, will readily allow the passage of the cystoscope.

Whalebone Urethral Guide.

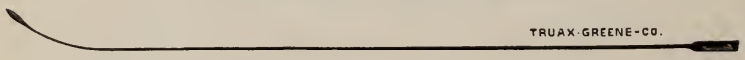

Fig. 2.

This instrument is particularly useful when one is going to operate in the pelvic connective tissue and wants to know where the ureter is while operating. It is made of the proper size, and the point has the proper resistance. I have noticed that by first introducing this ureteral guide pathological conditions in the pelvis could be more easily mapped out. For instance, I had a case of carcinoma with considerable induration beside and behind the cervix. I at first thought the case unfit for operation. The cervix did not, however, seem as badly affected as it ought to be in order to cause so

much trouble in the parametrium. I sent the patient to the hospital and promised to do what I could.

I introduced the ureteral searcher. It went under the broad ligament, and by palpation I could feel that the tubes and ovaries were adherent to the broad ligament entirely above the ureter, and easily diagnosed disease of the appendages with adhesions and exudate. The case proved to be one of pyosalpinx and carcinoma of the cervix without participation of the parametrium. If I had not tried this experiment I should not have been able to have appreciated the decided advantage of the ureteral searcher in differentiating between parametric and perimetric induration. The only objection to it is that it cannot be boiled.

Fig. 3. Spiral Ureteral Sound.

Here is another similar instrument. It is a flexible ureteral spiral sound, and is somewhat similar to the Jenks uterine spiral sound. It can be used for the same purposes as the whalebone searcher, and will easily take a curve without doing any injury to the ureter. It is made of steel and will stand boiling. In one case I left it in the ureter while I removed the uterus per vaginam. It showed me that I was operating very near the ureter while ligating the broad ligaments.

Medical Therapy of the Female Genital Tract.

By O. B. Will, M.D., Peoria, Ill.

(See page 543.)

The Abuse of Topical Applications to the Endometrium.

By Samuel L. Weber, M.D.

(See page 553.)

Discussion.

Dr. Henry T. Byford: I shall briefly discuss the papers from the standpoint of my own experience. I cannot say that all of the deductions drawn by the last essayist have corresponded with my

experience and the results of my treatment. As to septic tubal disease or pyosalpinx arising always from topical applications, I do not think it can be clearly demonstrated, because in a number of cases that have come under my observation—and I have had quite a number of cases to deal with of which I knew something about the history—the patients never had topical applications made. Several of the cases occurred in young girls and in women who had never been subject to sepsis in any way that I could determine. A great many cases occur in young women in which there is no history of infection, and we find on examination no septic germs of the kind referred to, in the uterus.

With regard to the action, there are two conditions which should be recognized, and which were well brought out in an excellent paper read last month by a member of the Society. We should make a distinction between hyperplasias and inflammations, giving the hyperplasias a separate position from the infections; in other words, we must consider them as not connected with specific infection, although in many cases such infection have gone before. It is for the purpose of curing the hyperplasia, and not sepsis, that we make uterine treatment in a great many cases.

I think the condemnation of glycerine by the first essayist was hardly logical. We know by experience that glycerine tampons do afford temporary relief in some cases. With reference to the theory of its action, it is supposed to relieve congestion by abstracting water from blood vessels and tissues. The writer maintained that the solid constituents would be left. I have always supposed that if we remove the fluid from the capillaries they will contract and the circulation will go on more normally, and the more solid constituents of the blood will be carried into the general circulation. If there is venous obstruction, then the abstraction of the fluid portion might theoretically do harm.

With regard to the action of hot water, I think the remarks were just, except that too much importance was given to it. If you have a cold in your eye and resort to hot douches, they will relieve it very much. But if inflammation has lasted for any length of time, as uterine inflammation usually has, the hot douches will not be of much curative value. It does, however, afford some relief in temporary congestions and exacerbations.

I do not believe that I have ever seen very much good from the application of tincture of iodine. I have seen it do good as an antiseptic, applied locally to the cervix, but I do not think it possesses the qualities claimed for it. If we have an acute infection we should not make strong applications. We want first of all to drain. If we

make local applications within a uterus that is not drained, the condition is made worse. The idea is to wash out or clean out the germs, and not to irritate the tissues. We should be sure that the cervix is properly dilated for the purpose of introducing an irrigating tube to wash out.

A practical point, however, in connection with the treatment of intra-uterine affections is that as a rule the original infection does not remain long. In many cases we can find no specific germs we are then called upon to relieve the hyperplasia that is present. We cannot do it merely by cleaning and washing out the uterus. We must do something that will produce absorption of effusion, that will coagulate and contract the blood vessels and if necessary destroy some of the tissue. We get this effect from the use of astringents and escharotics rather than from the tincture of iodine. In a case of a young girl in which there is a great deal of hemorrhage it may be possible to curette off a sufficient amount of the substance of the endometrium to cure the disease. Curetting does not, however, cure the disease in all cases, and in such instances we may be obliged to use local treatment afterward.

I have in my mind now a case of the worst kind of dysmenorrhœa in a young girl which lasted for years, although she had for a long time received the ordinary local treatment. And I take this opportunity to condemn the *ordinary* local treatment, believing that in nine cases out of ten the proper treatment is not properly given. In this case a thorough curettage had no effect upon the dysmenorrhœa. After three or four months I began making local applications twice a month of a forty-per-cent. solution of chloride of zinc, and she began to get better, and improved each month until she ceased to complain. In making local treatments I use the same care as for an operation. The patient takes a douche before she comes to the office. I swab out the cervix and fornices seven or eight times with a five-per-cent. solution of carbolic acid. I keep using it until there is no sign of turbidity of the solution, and then dip one of my dilating sounds into a five-per-cent. solution of carbolic acid, and progressively dilate the cervix until a No. 12 or 15 English or American sound can be introduced. I am now prepared to make my treatment, and I do it with extreme care. When these applications are made with care in cases in which there is no disease of the appendages, I do not see how they are going to hurt the appendages. I had a patient with a gonorrhœal salpingitis and ovaritis with adhesions. There was pus in both the tube and ovary. I removed the tube and ovary. After that I kept the cervix dilated in the manner spoken of, and used mild applications to the endo-

metrium. The woman became pregnant in a year or so thereafter, and bore a child, and has been well since. In this case I think that the local applications completed the cure.

I think that the usual objections to local treatment are applicable to the usual treatment made by the general practitioner, but they cannot be properly made to the proper treatment.

Dr. Joseph B. Bacon: I am pleased with both of the papers because they treat of important points. The paper of Dr. Weber deals with a more acute infective process, while that of Dr. Will dwells more upon chronic troubles. I have known Dr. Will for a long time, and know how painstaking and careful he is, and I believe the results that he speaks of prove it. I believe if the profession will try the treatment outlined by Dr. Will they will profit by it, particularly those members of the profession who do not practice asepsis and antisepsis. It is necessary to observe a good deal of care and caution in carrying out intra-uterine treatment. I began to practice gynæcology in a country district, and it was some years before I made intra-uterine applications because of the danger of infection. At that time very few country practitioners knew how to use intra-uterine applications aseptically, consequently there were many cases of pelvic inflammation as soon as patients fell into the hands of the physician in the country. I did not use intra-uterine applications until I learned how to do so from Dr. Byford. Dr. Byford touched upon an important point when he said that we should see that the cervix was sufficiently dilated, and be sure that we establish thorough drainage if we make intra-uterine applications.

I cannot agree with some of the statements made by Dr. Weber because they do not harmonize with my experience and practice. Some of the cases of pyosalpinx and of pelvic inflammation that have come under my care have not been treated at all. This was also my experience when engaged in general practice. Some of the worst forms of salpingitis, of pyosalpinx and periuterine inflammations with exudate had occurred without any previous treatment. Some of these cases happened in country districts, the patients not being in the habit of using vaginal douches. My experience covers the period since 1879, at which time vaginal douches were not as common as they are to-day. It is only within the last ten years that these douches have been used with greater frequency.

Dr. Weber's ideas with reference to the treatment of acute gonorrhœa are very good. The practitioner who resorts to meddlesome treatment will sooner or later get into trouble, and a patient is better off very often without any treatment. Those of us who have treated acute gonorrhœa in the male know that there are cases in

which there is a reflex spasm of the neck of the bladder. A young practitioner who has not had much experience or has very little knowledge of pathology might come to the conclusion that a stricture had formed, and the patient being unable to avoid urine on account of the spasm at the neck of the bladder, might go to work, thinking he had a stricture to deal with and pass a sound, when a serious form of cystitis would follow.

Dr. C. S. Bacon: There remains one or two points to be considered. Dr. Will has rendered us under obligations to him for presenting a subject which ought to receive consideration every year or two, in order that we may find out where we stand in regard to the use and indications of medical measures. I am, however, somewhat in doubt as to the propriety of the term "medical therapy" as applied to the local treatment of the genital organs. When reading the announcement of the paper I expected we should hear discussed the subject of medicines, such as ergot, hydrastis, etc. The restriction of the surgeon to the use of the knife or the curette, and the consignment of local treatment to the physician is a somewhat questionable use of terms. I consider cauterization of the uterus or local application to the uterus or to the vagina a minor surgical procedure.

To deny the value of the glycerine tampon, which has such a well recognized place in gynæcological therapeutics, I think requires a more elaborate discussion of the pathology of the uterine trouble, and of the method of action of the glycerine. Enlargement of the uterus and the congestion which increases its weight are conditions that may be due to an excessive amount of fluid not only in the blood vessels, but also in the lymphatics, and the glycerine may perhaps act also by emptying the lymphatics. The glycerine tampon also acts somewhat as a support to the uterus, lifting it up, if properly placed behind the cervix, where it acts as a pessary, and the improved position of the uterus may help to relieve the circulation and diminish the uterine congestion and size of the organ. So I doubt whether the theoretical objections which were raised to the use of glycerine tampons are sufficient to counterbalance the good effects found to be the result of general practice.

The value of the douche depends very largely upon the manner in which it is given. The position of the patient is of extreme importance. Another detail which was not clearly specified was the degree of heat of the douche. Water at a temperature of 105° has an entirely different effect from water used at a temperature of 115°. This is very well illustrated in the use of hot water injections in the treatment of post-partum hemorrhage; while a douche of 105° is of

no value, a douche of 120° is an extremely valuable stimulant to uterine contractions. The same thing holds true of the douche in the treatment of an enlarged, congested uterus or a uterus in a state of subinvolution following either abortion or labor.

The advantage of the use of the curette depends to a considerable extent upon the details and management of the after-treatment. In a case of infection the curette does not remove the pathogenic germs; it does not remove all the infected mucous membrane. It has been shown by the recent investigations of Prof. Werth that islands of mucous membrane remain. The curette used as an agent against infection, or as a measure in the treatment of uterine hyperplasia, can be considered only as a preparatory measure, which is to be followed by the use of hot applications, caustics, or other applications to the uterus. I believe that the failures in the use of the curette are very largely due to the fact that it is used alone, and is not followed by efficient after-treatment.

I am disposed to emphasize the position of Dr. Weber that the local treatment to the interior of the uterus is often very dangerous. How many of the semi-professional gynæcologists consider it necessary to sterilize the sound and the speculum after treating one patient before treating another? How many have facilities for doing that? How many have a sterilizing apparatus where the instruments can be at once boiled after one patient is treated before treating another? Very few, and the result is one patient is infected by the instruments used in the treatment of the preceding patient. I believe Dr. Weber approaches this subject in a right way by considering each kind of infection definitely, as well as its treatment, not speaking in general of the treatment of uterine inflammation or of uterine treatment, but of acute gonorrhœal infection, of chronic streptococcus infection, etc.

One point should always be emphasized in such a discussion as this, because it is not frequently considered, namely, the necessity of a bacteriological examination to determine the presence of gonorrhœal infection, as well as the progress of the treatment. The ease with which such examinations can be practically made, as well as their importance, is so great that they should always be carried out.

Dr. M. L. Harris: My experience in topical applications to the interior of the uterus is not very extensive, and my remarks will emanate largely from a general surgical point of view. We must all admit that the inflammations spoken of here to-night are due to the presence and growth of pathogenic microbes. If there is one point toward which modern scientific investigations inevitably lead

us, it is to the fact that we must depend absolutely upon the vital action of the living cells to overcome the invasion of all microbes. The study of immunity, of serum therapy, of asepsis and antisepsis in surgery inevitably leads to this conclusion. This being a fact, anything which destroys the vitality of the cells, whose duty it is to overcome infection at the time, must absolutely do harm. This fact was recognized long before it was formulated into a law by the most experienced teachers when they stated that in acute inflammations we should omit the topical application of anything which might act as an irritant. It has been said that in cases of acute gonorrhœa we should use no injections because they are destructive to the cells whose activity should be increased instead of diminished. There has been no dissenting voice on this point to-night, so far as I have heard. The reason is, we have as yet no germicide which we can apply topically that does not have a harmful effect upon the cells, consequently the germicide failing to come in contact with and destroy all the microbes, destroys the cells, and the result is disastrous. We have a forcible illustration of this in the recent remedy brought forth for the cure of gonorrhœa, argonin. Two valuable points are spoken of regarding this remedy. First, it is a non-irritant; second, it has a germicidal effect upon the gonococcus. That is why the results in the acute stage have been so favorable. And it is likewise known that after the acute stage is over argonin has but little effect because the gonococcus is now beyond its reach. I think that the routine use of topical applications is more harmful than good. I gather from the remarks of Dr. Byford that he had in mind, when he said he would not attempt to explain certain points, that we must depend upon the vitality of the living cells to overcome the infection and not upon the topical applications. Am I right ?

Dr. Byford: Yes.

Dr. Harris: This is a fact which is being impressed upon us more and more every day, and it is the line upon which we must work to obtain the best and most beneficial results. Not to act by agents which destroy the cells, but by agents which increase the activity of the cells in the particular line of overcoming and destroying invading microbes.

For these reasons I think the paper by the second essayist, Dr. Weber, contains much the greater germ of truth.

Dr. John T. Binkley, Jr.: The results obtained by Dr. Byford are, I know, superior to those obtained by the average practitioner. Dr. Byford observes every little detail in connection with his work. He is most painstaking and careful, so much so that I do not believe many practitioners carry out details to the letter as he does. I

believe this to be true after having observed his work as well as that of others. Dr. Byford is extremely painstaking in preparation for local applications. He thoroughly disinfects the vagina, as he says, always with a five-per-cent. solution of carbolic acid. This he did when I first became acquainted with his methods, and I presume he has improved upon them since then. Thorough disinfection of the vagina is followed by careful disinfection and dilatation of the cervix with graduated sounds, so that he has prepared a clean field for making his applications in a scientific and skilful manner.

There were one or two points brought out in Dr. Will's paper that I would criticise. I do not understand how Dr. Will knows he gets this physiological line of demarkation after the application of strong chloride of zinc solutions. He referred to several cases which he treated, but I failed to hear him say what kind of cases. I presume he referred to cases of various forms of endometritis. We frequently arrive at our conclusions and make our deductions by analogy.

Dr. Will's description of hot water applications is to my mind an excellent point, and I am thoroughly convinced of their efficacy. A case in point. Recently a farmer, while working in a planing mill, sustained an injury of the hand. The hand was badly mangled. He was brought to my hospital, and the middle of the hand, three fingers and the extensor tendons were all laid bare. The hand was enormously swollen. Hot applications to the hand in a comparatively short time produced absorption of the deposit, and nothing but hot applications cured the hand. The man's hand was temporarily dressed at the time of the injury by a physician near by without cleansing it, although the physician had used iodoform freely all over the hand, and the wounds were covered up so that there was no drainage. The hand was very dirty. Before resorting to hot applications the hand was scrubbed.

Not long since I had a case of strangulated hernia in a woman sixty-seven years of age. The sac was as large as my two hands, the omentum was gangrenous, and all the tissues above and below, all the inguinal glands down to the inside of the thigh were infected. I removed the glands, left the wound entirely open. There was general infiltration and œdema of the whole anterior aspect. Hot moist applications, changed every half hour for days, enabled me to save that woman's life. The temperature of the water used was from 115° to 120°.

Flushing the vault of the vagina with copious hot douches, with the woman in the position Dr. Will describes, is the best course to pursue. These douches stimulate uterine muscular contractions

and cause increased circulation. The method of making topical applications with the extreme care that is exercised by Dr. Byford will no doubt in many instances give satisfactory results. I notice the whole trend of the discussion has been in defense of topical applications in those cases that have not been infected. How do we know that other irritants have not been used? How do we know what pernicious habits have obtained in those cases? Perhaps the infection in some of the cases was due to a previously-existing gonorrhœa, and not to the use of unclean instruments. We sometimes arrive at conclusions too rapidly. The gynæcologist does not receive money enough to undertake the work of making a differential diagnosis in individual cases in a thorough and scientific manner. He cannot take the time to differentiate the kinds of germ infection.

I was interested in Dr. Byford's case of tubo-ovarian abscess, in which he made topical applications for two or three months to cure an endometritis before removing the graver cause above. It seems to me the removal of the tubo-ovarian abscess first would have been the quicker way to have accomplished the results.

In conclusion, I believe topical applications, made in a careful manner, with strict attention to asepsis and antisepsis, will give good results. Why not keep the patient under observation for a few days or weeks, get the action of the bowels perfect, have the pelvic organs in good condition, and let the patient enjoy quietude and rest. Then later dilate the cervix, do a superficial or deep curettement, as the case may require, establish drainage, and have done with the case at the end of a couple of weeks. Or, if necessary, pursue this treatment a second time, because if we have to pursue methods to get the same results by long-continued painstaking topical applications, we must wear both the patients and ourselves out, and there are few men who can hold patients to the end by resorting to such a long and tedious treatment. There are some men that can do this. If the time runs into a few months patients will go away displeased and seek other physicians. I have made topical applications in hundreds of cases with good results, and every practitioner endeavors to get the best results in the quickest way. My own conclusions regarding this subject agree with those expressed by Drs. Harris and Weber. I believe the topical applications are too much used, and I prefer curettement in the various forms of endometritis.

Dr. O. B. Will (closing the discussion): I feel that I have nothing of importance to add to the paper I have read. Courtesy demands that I should say a word or two respecting the criticisms

offered. In the first place, I accept with good grace the position taken by Dr. Byford respecting the philosophy of this condition. It is altogether possible that I am wrong in that, yet I consider the position I have taken practically tenable.

In regard to the remarks of Dr. Bacon, I feel, as he has indicated, that it is not wise to put forth some doctrines under the existing circumstances, without extreme caution, as it is well known that many practitioners do not take the precautions that should be taken with respect to topical applications. A few weeks ago I remember being called to a small town outside of Peoria, in consultation, and upon the window sill I saw an applicator charged with cotton used on the last, lying there ready for the next patient.

I am free to admit, also, that my classification may be faulty, but I feel that medicine and surgery at the present time are interdependent, and that in any line of treatment we are obliged to have recourse to both of them. Even upon the very threshold of modern surgery stands medicine, with its anæsthetizing and sterilizing influences.

With respect to the remarks of Dr. Harris, he has said that there is no disagreement this evening with reference to the ultimate value of the living, active cell as a barrier against infection, but I think he misunderstood the drift of my remarks. I intended to convey the idea that one of the objects in the application of the cautery was to invite the larger proportion of that particular element to the part as a barrier against the inroads of septic material. We can all agree I think on that point.

Dr. Samuel L. Weber (closing the discussion): I have very little to say in addition to what I stated in my paper. I think some of the members misunderstood me. I did not intend to imply that all cases of pyosalpinx were caused by topical treatment. A vast number of abortions are criminally produced, and in a large number of these cases septic salpingitis and pyosalpinx follow. We have many cases of infection following labor, and infection of the tubes from intra-uterine operations, from laceration of the cervix, etc. I distinctly stated in my paper that in a large number of cases there was extension of the inflammatory or infective process into the tubes with or without treatment. I still maintain that. From what little I have read on this subject I think the trend of opinion is towards supporting the position I have taken, that a large percentage of cases of salpingitis are due to gonorrhœal infection. A mixed infection is induced by local treatment, with extension of the process to the tubes. In acute gonorrhœa routine applications should not be made. It is hard to draw the line between acute and

chronic gonorrhœa in the female just as it is in the male. Frequently the acute form of the disease does not give many symptoms. In the cases of gonorrhœal infection of the endometrium which come to our office, we do not know whether they are acute or chronic, the symptom complex is so frequently similar in acute, sub-acute and chronic forms. The temptation is to make local applications, and this is yielded to by the vast majority of practitioners. I maintain that a great many of such applications are followed by pyosalpinx.

One more point, how chemicals act locally. I have been lecturing on materia medica for five years, and there is no subject that I have to talk about which gives me so much trouble as the physiological action of the various drugs that are used for local treatment of the endometrium, the urethra, the pharynx and other mucous membranes. It is very easy to stand up before students and practitioners and talk about certain drugs being astringents, alteratives, stimulants, and so forth, but we know very little about them. I think bacteriologic work tends to confirm the fact that all inflammations of mucous membranes anywhere are of bacterial origin, even an acute rhinitis that comes in an hour after an exposure to cold. And I think that these locally-applied drugs except the palliatives ones all act essentially through their antiseptic action, different drugs being valuable at different stages of the inflammation.

Official Transactions.

T. J. Watkins, *Editor of Society.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, March 4, 1897.

The President, E. E. Montgomery, M.D., in the Chair.

Remarks on Drainage following Abdominal Section.

By J. M. Baldy, M.D.

(See page 521.)

Discussion.

Dr. Joseph Price: The propriety of discussing a paper in the absence of the author is always questionable. This is open for discussion, and we had better discuss it, as we are here for that purpose, and leave it for the author to defend himself some other time in a similar discussion and discuss the subject in a general way. The author of the paper does not dismiss drainage. At three or more points in the paper he admits that it is important, and he gives an approximate percentage of five or more per cent. in which it should be practised, but it is impossible for the individual operator to lay down rules for all abdominal surgeons. Our methods differ. The author indicates very clearly that his methods differ decidedly from those of others both at home and abroad and in neighboring cities. The work of individual operators in the same city differs greatly. For instance, in this city it is an easy matter for one to dismiss drainage cases, if he wishes, from his work, but in the discussion of a subject of so much importance it is well to consider not only the history of the subject, but the advances we have made and how we have made them.

Drainage has really given us an abdominal surgery or a pelvic surgery. The author surely loses sight of much of the recent work and many of the advantages in methods and also in detail. The author it seems, objects to the anxiety following the use of drainage. This has never been my experience; on the other hand, it relieves all anxiety. For instance, I have cases with drainage-tubes in now. I placed them yesterday, and I placed them in another patient to-day, and they relieve my anxiety. For instance, I asked my nephew to

inspect the drainage tube, and to clean and remove it if necessary. The tube had been in thirty-six hours. He came back and said the fluid was dark. I knew what this meant, and directed him to leave the tube in. In another case, a desperate one, the appendix was removed. There was an ovarian abscess and pus tube, and a careful toilet with drainage was instituted. At not a point below the promontory of the sacrum was there a particle of peritoneum to absorb fluids, healthy or filthy, septic or non-septic. It is just that group of cases I refer to. Surely no one would permit the bottled-up fluid to remain, four or five ounces in quantity, dirty, stinking fluids.

Keith, in his little work discussing the Listerian methods and the like, says, "Where would we be without drainage?" dismissing the spray and solutions, and adopting only a gospel of cleanliness, where after all, would we be without drainage? He makes that statement with a series of forty-four cases in the Royal Infirmaries (the patients treated before large classes) with one death. Later he makes the statement of eighty-two or eighty-eight operations done in the Royal Infirmary before classes, with a mortality of two.

Now Wells always questioned the value of drainage, he reports two desperate cases that he drained and that got well, and he makes an apology for the drainage, notwithstanding that both of them recovered. He states that he did not drain in a large group of cases, and they got well, and probably if he had not drained these two they would have recovered. Mr. Tait, speaking of drainage, said some few years ago that he was not draining as much as usual, but he goes on to say that the preparation of his patients is much more thorough. The good results were largely due to the fact that the patients were prepared before the operation by free purgation, emptying the alimentary canal of everything that might cause trouble.

You remember that Atlee and Nathan Smith and others employed what we might call now the wick drainage; for instance, Morris, in New York, says that drainage in appendicitis, more than the wick, is not necessary, and I suppose Morris is one of the more refined authorities in appendicitis that we have in this country. His work is probably the best in the world, and he simply uses the wick drainage. Remember at the same time he does not do simply an incision operation. He liberates all bowel adhesions, the small and large, and repairs all complications incident to the appendicitis. Atlee permitted two or more ligatures to come out of the lower end of the incision. At that time Nathan R. Smith used a ligature made of a kid glove. Atlee used the linen of the shoemaker-thread, so the ligatures used early in the history of ovariotomy were probably as

large as the wick of gauze, and early in the history of ovariotomy, of the first twenty-four or twenty-seven done in America, the mortality was just about as low as it is at present.

To sum up the importance of drainage, you can discuss the subject from two or more points of view. We know very well that a hospital surgeon, private or public, can keep his mortality down just about as low as he chooses to. For instance, I can always either keep my mortality at 1 per cent. or nil. You can do it in two ways: you can do it by fixing your fee too high, by dismissing dangerous, desperate cases, you can refuse these cases, telling the friends and relatives that they are inoperable, that they are hopeless. But there is no influence on the face of the earth combined that would influence me in the least as to the value of drainage, my experience has been and is progressive in the highest degree, notwithstanding my work has been under the observation of a large number of experienced operators. At least five hundred operators visit my work yearly, and they see the drainage-tube placed every day. I have not done a ventrofixation in ten years. The percentage of drainage in my own work has increased. I remember some years ago it varied from forty-five to even seventy per cent., even then in the alleys and courts the mortality was only one per cent. and never above it. Later, when everybody got to operating, and a good many got to refusing complicated operations (and there are no more complicated class of cases come into my hands than those patients who have been operated upon previously by other men and find themselves as bad or worse as a result). At that time there was a general questioning as to drainage both at home and abroad, and I believe the utterances of Mr. Tait in this relation, that he was not draining as much as usual, were really harmful, because he did influence a class of men. Now the statement that the tendency is to non-drainage is an error, because the whole world, the whole continent, New York and wherever the new vaginal surgery is done, extirpation, partial and complete, there is a universal and wholesale admission that drainage is so perfect, that drainage is so complete that it saves the patient. That is very true, if drainage is copious. By abdominal section, however, you can make sure that the pelvis is freed of adhesions; make a free incision, remove suppurating tubes and ovaries. Some men puncture them, and then use free drainage in the vaginal method; that is, they puncture the ovaries, and go on the principle that drainage will do the rest. It is only necessary to pick up the journals at home and abroad, and you will find the admission that "drainage will do the rest." After all they have come back to my position. While condemning my position in drainage (and the

general tendency was to get along without drainage for a time), they have come back to abundant drainage. Many who condemned my method have adopted the drainage, notwithstanding their surgery is imperfect.

Dr. R. C. Norris: Dr. Baldy has brought up a subject that is of the keenest interest to every one who attempts to do abdominal surgery. A general discussion will be of interest to us as well as to those who read our Transactions.

It seems to me that each individual must be guided in this question by his own experiences—by the cases which he individually meets. In other words, the character of the cases that one meets and the character of the work done by the individual must determine for that individual when to use and when not to use drainage. We cannot advance the general proposition that drainage should be used in a certain definite proportion of cases. We meet at times a very easy group of cases, and the next group of cases may be very difficult for us. It is important not to be too much influenced by Dr. Baldy's paper. Each operator must use his best judgment, as I am sure Dr. Baldy does. I remember having been influenced by a recent conversation with him. His excellent results without drainage induced me to close up a case when I should have drained it. I can recall other cases wherein not to have used drainage would certainly have lost the patient; one case particularly, where the bowel was gangrenous, an extensive resection of the intestine was required, and drainage not only with a glass tube but drainage with gauze into the vaginal vault, I am quite sure, saved the woman's life. That the character of the surgical work determines the omission of or necessity for drainage is certain.

Those men who deal with old pus cases by hysterectomy obtain, to my mind, more complete results. Their technique prevents their having pools of blood in the bottom of the pelvis, and therefore they are not called upon to use drainage so frequently, as indicated by Dr. Price's remarks. If we simply take away pus tubes, ligating only the ovarian arteries, and the tops of the broad ligaments, and leave in the bottom of the pelvis widespread adhesions which have been torn, the blood supply left in the pelvis is certain to permit oozing that very often requires drainage. If, on the other hand, as we all know Dr. Baldy does, both the uterine and ovarian arteries are ligated, thus completely controlling the blood supply, and if the tissues in the bottom of the pelvis are shut off from the peritoneal cavity there is clean, clear-cut surgery and there is no oozing. Look at these cases as you see them after the operation is finished. There is no blood in the pelvis, the raw surfaces are covered up and cannot bleed.

If we are to retain the old plan of operating it would be neglect of duty not to use a drainage-tube. In some of these desperate cases where we are called upon to use the drainage-tube, it seems to me that the chances for a fistula or hernia are not to be put in the balance with the patient's life.

Dr. Price has pointed out that the vaginal operators claim as one of the most important features of their treatment, the widespread drainage that they obtain. That is very true, since to them drainage is a necessity, for their work is necessarily, and often incomplete. Such is not the case with the abdominal operator who cleans the pelvis to the vaginal junction of the cervix. Now I think that Dr. Baldy has brought this question out with the idea of eliciting our individual opinions and, as I have said, the character of the case we have to deal with and the character of the work done by the individual must determine for that individual whether or not to use the drainage-tube. A discussion that can help us in this matter to a clear-cut decision is of great value, because every one who does this work is at times undecided, and knows the great anxiety it occasions when one must decide whether to use the drainage-tube in an individual case or whether to trust to chances and close the abdomen without drainage. I believe the more complete the surgery the less the demand for drainage, and it should be observed that those men who are the most experienced operators will frequently do without drainage where less experienced operators will necessarily drain. The point I wish to make clear, that of cleaning out the pelvis and ligating all arteries, will certainly do away with the necessity for drainage in a large number of cases.

Dr. C. P. Noble: My own experience has been very much that, I believe, of Dr. Baldy's, namely, that I have very greatly lessened the frequency with which I drain. In the first one hundred or two hundred abdominal sections I performed, ninety per cent. were drained; in the last one hundred abdominal sections I think three were drained. That about represents what my experience has taught me about the wisdom of avoiding drainage whenever it is possible. There are various reasons why I have given up drainage, except in extreme cases. The principal ones are that with the facilities we now have for work, we can do so much better work than we could five or six years ago, that we can eliminate a number of reasons for drainage. I was very glad to hear Dr. Norris state his views on hysterectomy, because I have spoken frequently of hysterectomy from this particular standpoint. Any one who has done öophorosalpingectomy by the old method, and ligated only the upper part of the broad ligament, knows very well that oozing takes

place when the operation is over if there are many torn adhesions low down on the broad ligament. It is true that by putting the patient in the Trendelenburg posture and making a long incision you can, with a great deal of trouble, place ligatures on the floor of the pelvis, and thus control oozing, but it is a very difficult matter. I have done it a number of times in my experience, and know you can get ligatures down there, but it is a very troublesome and trying piece of work. In these cases if hysterectomy is done the uterine artery as well as the ovarian artery is controlled. The healthy peritoneum over the front of the uterus and over the front of the broad ligament can be stitched over this wounded area, and a comparatively healthy peritoneum is left in the pelvis, and in all these cases drainage can be done without, by simply substituting hysterectomy for double ovariectomy. If I continued to operate by the old method I should probably drain twenty times as often as I do.

I was first influenced to give up drainage by the results Dr. Baer got. We all knew Dr. Baer had good results, although he drained practically not at all, and although his asepsis was no more rigid than ours. Another thing was the work done by Dr. Robb and Dr. Ghrisky bacteriologically. And when better results were obtained without drainage I was very glad to do without the annoyances which were entailed by its use, and I may say that inside of the last five or ten years I have operated on 356 cases without drainage, and so far as I know there have been only two hernias in the list. In this way you get no fistulæ or herniæ, and patients get well more quickly, and much more comfortably.

Another point in getting rid of drainage is that in very extensive pelvic abscesses I have substituted incision and drainage per vaginam for the more formal abdominal operation. In that way we can get rid of the drainage, which would be advisable in such cases after cœliotomy. In cases that are "border-line cases" the plan I follow (that is pus cases where in old days we would always have drained), is to pack off the intestines very carefully with gauze pads so as to prevent the possibility of soiling them with pus in case rupture occurs. If the pus sac ruptures the pus is sopped up with gauze. When the hysterectomy is finished, the intestines being still covered with gauze, the pelvis is thoroughly cleaned out, and recently I have followed the method of filling the abdomen full of saline solution and leaving it in; then, reversing our former procedure, I have raised the foot of the bed and let the salt solution be diffused through the abdomen to the diaphragm.

One reason why I do not like vaginal hysterectomy is the necessity for drainage. Of course there is no doubt that the packing

which is done in vaginal hysterectomy, is not entirely for drainage, but it is largely to shut off the area which must necessarily become necrotic on account of the clamps or ligatures, and to protect the peritoneum from infection.

Dr. Joseph Price: Dr. Noble criticizes the Continental men in extirpating the uterus. At the same time he admits that he has gone back to the ancient custom of vaginal puncture, incision and drainage. So his criticism of the Continental men at the same time of his own adoption of the ancient method of treatment of pelvic suppuration is subject to precisely the same criticism that he makes of extirpating the uterus, of returning to the ancient method, and the same holds good in regard to the remarks in criticism of drainage following the direct methods of enucleation. It is curious that we get entirely different mental pictures of just what is done and how it is done. It is a common thing to hear operators criticize methods of enucleation. I do not understand what they mean when they tell us that they tear up everything in the pelvis. Freeing omentum and small bowel, sigmoid folded up on the pus tube or ovarian abscess, it is a common thing to have to go below the sigmoid to free them. This evening I glanced at some statistics in appendicitis operations that were associated with abdominal section for other trouble, in which the operator removes the appendix five times in a series of ten cases. Five of these were associated with other trouble, and the section was done for the other trouble. Freeing small bowels and repairing lesions is a vital procedure. The condition of the uterus in these cases is also a consideration; for instance, I exposed the uterus to-day, and it was a clean healthy little uterus. Of course if a uterus is retroverted and adherent it is important to free it.

The amputations and matching the peritoneum over the stump does not cover up the denuded surfaces at the seat of enucleations, whether filthy or clean. The conditions indicating drainage are far removed from the stump of amputated uterus.

So that amputation of the uterus is not an argument in favor of non-drainage, and I will just allude briefly to a series of seventeen cases of hysterectomies reported by Taber Johnson. One died and three had large abscesses in the stump, two opened through the incision and one through the vagina. You may draw your own conclusions of such a method. Pus must be evacuated either above or below or in the peritoneal cavity. It was very fortunate that two opened through the incision, the other opened through the vagina. It was only by the grace of God that these patients were saved. I have alluded to appendicitis here; if it is non-purulent I excep-

tionally drain, but I nearly always close, except there be extensive suppuration posterior to the cæcum or a filthy bowel complication. Gallstone cases we have to drain, and it is drainage with most surgeons in gallstone surgery that saves the patient. The results are perfect. In incision of the kidney, indications are wholly in favor of drainage.

Now what work is comparable to the work of the Hopkins? The last report gives a mortality of ten per cent! My own work extends at present over eight months, over 150 sections, with a nil mortality. Of the last 200 sections done for actual disease, and most of them desperate conditions in unpromising patients, I have had three deaths.

Report of a Cæsarian Section.

By W. Reynolds Wilson, M.D.

(See page 531.)

Discussion.

Dr. R. C. Norris: I have been very much interested in Dr. Wilson's report. He is to be congratulated on the result. Two points occurred to me as he read his paper. One was the statement with reference to the external conjugate diameter. The measurement of the external conjugate diameter has only a relative value. The important point in a case of this kind or cases analogous is to determine the relative size of the infant's head to the pelvis. I at one time looked upon the study of these cases in this way: that the size of the pelvis, above all things, should be estimated, but as my experience has extended, I believe that within certain limits the size of the pelvis is not so important as to determine the relative size of the head to the pelvis. For instance, I have had a patient in the Retreat with an external conjugate of 15 cm. with spontaneous delivery. It was not even necessary to use forceps. I have also had a patient with an external conjugate of 18 cm. and a true conjugate of 8 cm. that required an induced labor. While all prima gravidæ should be examined externally with the pelvimeter, the internal examination is the more important. It seems to me that Dr. Wilson's election of the Cæsarean section was the proper operation. Of course a symphyseotomy could have been thought of at the time, and probably was. The practical fact in dealing with a moderately-contracted pelvis is to give the mother a fair chance, and before the membranes rupture, and where strong uterine contractions have

been present for an hour or two to carefully examine her under ether. I know I have saved three or four patients in the last two years' serious operations by this plan of treatment. When the saggital suture of the child's head closely approaches the promontory of the sacrum, showing a great degree of obliquity, the obstruction then counts for more than when the saggital suture is more directly in the transverse diameter of pelvis. A conjugate of 7 cm., with a bi-parietal diameter of 8 cm., as in Dr. Wilson's case, indicates that it would have been exceedingly difficult or impossible to have delivered the patient in any other way at term. It is impossible to predict the result in this case had labor been induced. It is well known, however, that a negro baby's head is capable of moulding to a large extent. If there is the slightest doubt as to the viability of the child when born prematurely, we should let the case go to term, but I am very much in favor of premature labor in cases of contraction of pelvis. I have saved many patients serious operations by that plan and by means of the incubator, gavage and proper treatment, which can be obtained, the children have gone on to good development, and the mothers have had a normal convalescence. I know those who do abdominal operations are always influenced in favor of the abdominal operation if there is the slightest chance of the case being uncertain, because we feel really capable of dealing with such cases, yet I believe, that for the rank and file of men, a word of caution should be uttered against a hurried decision in favor of Cæsarean section, and that the advantage of induced labor in less experienced hands should not be forgotten.

Dr. Joseph Price: Dr. Wilson and his colleagues are to be congratulated upon their success and good judgment in their removal of the fœtus. The only criticism I would make is that they did not end the possibility of this woman conceiving again by extirpating. While she may be perfectly safe in Philadelphia for the next ten gestations, if she goes to some neighboring town she will perish in the poor-house. A few years ago while sitting in a station waiting for a train I said to a physician beside me, noticing a subject quite similar to the one presented this evening, dwarf, deformed and pregnant, "She is a good subject for Porro's operation," and asked whose patient she was. He told me she was a patient of one of the resident doctors, and she died in the poor-house undelivered. And so it is all over the country; lots of these patients are perishing undelivered. It seems like a very plain statement to make and a bold one, but it is a true one, and the deliveries, when they do take place, are something horrible; and, alluding to that fact, while Dr. Norris' remarks here in Philadelphia are all right about the in-

duction of a premature delivery by the rank and file throughout the country, the applicaton of forceps and the scientific methods we adopt here differ very much away from home. While Dr. Norris stated very plainly that even in organized institutions they prefer the abdominal section, the very simplicity of it, knowing that it is almost impossible for the patient to die with an abdominal section. they are influenced to do it, at the same time knowing that the induction of that labor will require twenty-four to forty-eight hours' watching and the application of scientific forceps for a safe delivery. For instance, I remember inducing labor in some cases because the first three children had been sacrificed in labor in Philadelphia, and in those cases I induced labor at eight months and two weeks after conception, and made high application of Taylor forceps, narrow-blade, engaging and then making application of the traction forceps, and delivered a living child, but I would rather spend a week in jail than go through some of these deliveries again. But in these cases I would urge the Porro procedure, and I see right here in this city some of the teachers are doing the extirpation or the modified Porro, so-called. I think one or two recent cases of Dr. Hirst's were amputations or extirpations. I think in this case to-night it should have been amputation and the true Porro. She is one of the peculiar people who are prone to fibroid growths. The result would have been precisely the same with amputation. We must admit that this was an ideal operation. It was done throughout without shock and without a hitch in convalescence, not a rise in temperature even, and we love to hear such reports.

Dr. C. P. Noble: I think the grounds taken by Dr. Wilson were eminently wise. The case should certainly be looked upon as a case having pelvic deformity, but also as an immature woman, being only fourteen years of age. I remember very well a number of children with very small pelves, in whom, were they grown women, delivery would have been impossible. I think this fact should always be borne in mind, and I think the plan of waiting in young subjects, even though the pelves are small and the child's head is large, is wise. Had it not been for the age of the patient I think that this plan would have been very bad. I am heartily in accord with the teaching that Cæsarean section should be done before the woman falls in labor, but in this case it was only right to wait to see what labor would do in the way of moulding the head. I also agree with Dr. Wilson in the choice of operation. Personally, I have never seen the logic of the Porro operation, unless there is some disease of the uterus which would require its removal if the woman were not pregnant. With a negro pelvis and a negro head

it is also true that diameters are more relative than they are in white labors, because there is no doubt whatever that many negroes with very small diameters are delivered when white women would not be delivered on account of the size of the child's head. In that matter I am in accord with Dr. Norris that too much attention is paid to the size of the pelvis and too little to the relative size of the child's head and pelvis.

Dr. G. M. Boyd: I had the pleasure of assisting Dr. Wilson in this operation, although, if I remember rightly, I did not see the patient until shortly after she fell in labor. The superficial examination seemed to convince one that nothing short of an abdominal operation would be expedient. After she had been given a chance to deliver herself the head still remained above the pelvic brim, the promontory of the sacrum was very easily reached, and after a careful examination it seemed that abdominal section was the only operative interference that would be wise. I agreed with Dr. Wilson as to the wisdom of the Sanger operation, and think as Dr. Noble does, that unless we have other difficulties presenting themselves, that it is not always wise to do the Porro operation. I do not feel in this case that if we had had an opportunity of inducing premature labor that it would have been a wise procedure. Induction of premature labor, if the cephalic extremity of the ovoid presents at about the two hundred and fiftieth day of gestation, does give us a means of handling some of our difficult cases, but we must take into consideration whether the cephalic or pelvic pole is presenting. If the pelvic pole presented the case has been of a more complicated nature. The delivery of the after-coming head in a premature labor necessarily endangers the child's life very much.

Dr. Joseph Price: Some New Yorker, I think, spent some time in Europe and collected all the repeated Cæsarean sections he could find at home and abroad, particularly some he saw in some European clinic, the paper was published in *The New York Obstetrical Journal*, and you all have an opportunity of referring to it, but to read the repeated Cæsarean sections, once, twice or thrice, you will find a huge number of complications, visceral or others. Some one was telling me the other day of a case operated on by Olshausen, in which he incised the buttocks of the baby freely in making his incision through the anchored cicatrix; but the bowel lesions, the hæmorrhage and numerous complications have always seemed to me to be a very strong argument against permitting repeated gestation in these cases, and just here in this city the subsequent conceptions and deliveries have not been favorable; one women with a metro-abdominal fistula due to an old Cæsarean section, who was

about to be delivered through the fistula or weakened abdominal wall, and a good number of them have been absolutely disastrous, and why these women should be allowed to go at large when the risks of a disastrous result will be very much greater in the next labor.

In regard to the relative disproportion in these people, between the size of the head and the pelvis, it is very marked indeed, but the labors in these black people are very much easier than in white women, these little bullet heads engage very easily, and are easily delivered. I remember some years ago in Duponceau street I attended two children, one eleven and the other thirteen years, both conceived at a Bethel picnic, probably the same day and same hour, and both were delivered the same afternoon and in the same room and at the same hour, with their mother nursing them. The mother, I remember, rebuked them from time to time when they made any noise by saying: "Put yor head in de pillow, smofe yor breaf. You've don brought open shame on yor por ole mother."

Hodge discusses very beautifully the moulding of intelligent people's heads. You can't mould the heads of these blacks. There is some elongation, but not the overlapping that we find in intelligent people. Sometimes we can pick out in a presenting head just where that man stands in mechanical arts.

Dr. W. Reynolds Wilson: I think it is well to observe in these cases that we do not always deal with patients in this class of life. The life of the infant must be taken into consideration, the possibility of future pregnancies should be entertained, as a good deal may depend upon it, and it is by far the greatest question in the management of a case, whether we should resort to extirpation and save the risk to the mother or whether we should even the risk between the future children and the mother, with the idea of establishing premature delivery of a living child hereafter.

Sapræmia Resulting From the Presence of a Dermoid Cyst.

By E. E. Montgomery.

(See page 529.)

Discussion.

Dr. Joseph Price: It is a great pity that such tumors are not always presented and recorded. There is scarcely an operator in the room who has not alluded to similar conditions and referred to the causal relations they bear to post-puerperal conditions.

I have repeatedly found them not only in obstetrical work but in delivering placenta. By the expression method I have always made it a rule to use both sides of my hands throughout the pelvis that I might determine the presence or absence of a growth of that character. The traumatism resulting from the pressure to such a growth as this is no doubt responsible for puerperal deaths, and in many cases an unjust stigma rests upon the attendant. Very recently I have removed suppurating dermoids. They are nearly always adherent. It is interesting that this growth was not found embedded like a cobble-stone in the pelvis or broad ligament. They are nearly always inflamed and are prone to suppurate, and I believe that many cases of purulent forms of puerperal fever are due to such growths. I remember two women in the Retreat. I recognized a little growth in delivery, and in both these cases the convalescence was absolutely perfect, temperature never went above 100, three weeks later I removed these dermoids, I enucleated, and I was surprised when I enucleated that the deliveries had been so easy and not obstructed, and the profession ought to be grateful for such a report and presentation.

Dr. Levi J. Hammond: I would like to ask Dr. Montgomery if there was an unusual amount of bleeding immediately following the delivery? A case that I saw a few days ago had an excessive hemorrhage immediately after the delivery, and on close examination I found a small tumor in the right broad ligament. I was enabled, however, to get satisfactory contraction of the uterus, and consequently arrest of the hemorrhage, so nothing further was done, as the patient presented no further untoward symptoms. I hope to be able to clear up the trouble after the lying-in period is over.

Dr. R. C. Norris: There are two things of special interest to me in this case: In the first place, this is the seventh case of ovarian tumor that I know of that has been subjected to abdominal section in the puerperal period when the woman was in a septic condition, and the seven cases died. There must be something peculiarly virulent in these cases. The puerperal condition doubtless predisposes women to rapid absorption, the large lymphatics making it possible for absorption to occur so rapidly that they become profoundly intoxicated with poison, and the operation frequently comes too late. Two weeks ago I performed a Cæsarean section in Germantown on a patient in whom a suppurating intraligamentous cyst was present. The obstruction was thought to be a fibroid, and there was delay of two days, hoping the tumor would be lifted out of the pelvis during labor, and finally when I arrived and opened the woman's abdomen the peritoneal cavity was infected, and the

pelvic cavity was gangrenous. The patient's temperature was 103°, pulse 130, and one hour after operation her temperature and pulse were the same as before, and she rapidly sank and died in forty-eight hours. Such tumors are peculiarly dangerous in puerperal women, and I think their mortality arises from the fact that attempts at removal are made after a prolonged labor or in the puerperium. A diagnosis should be made early in pregnancy and operation performed at once. The high mortality during or shortly after labor is an argument in favor of early operation in all such growths.

Another point of interest is the character of the interior of the uterus exhibited by Dr. Montgomery. This woman had been curetted. You will observe the large masses of hypertrophied decidua intimately adhesive to the uterine wall. It has been said by a distinguished obstetrician that hypertrophied decidua does not occur. An eminent operator belonging to this Society has said the finger should be used to remove blood clots and other material present in the uterus after labor. This decidua could not be removed with the finger. It simply emphasizes the facts that hypertrophied decidua is possible, and that it takes a curette and a sharp curette to remove it.

Dr. C. P. Noble: Every one seems to have overlooked the thrombus in this case, and which Dr. Montgomery laid special stress on. It was the infection of thrombosis which was, after all, the cause of the patient's death.

Dr. G. M. Boyd: It seems to me from Dr. Montgomery's report the case might have been possibly looked upon as purely an infected case, and that the neoplasm had nothing to do with the elevation of temperature and other symptoms of infection. The fact that there was no tenderness over the uterus again calls our attention to the probable frequency of infection about the perineum or some part of the vaginal vault. The result seems to be another illustration of the gravity of operative interference early in cases of puerperal infection. It seems to me that if the infection had been due to a neoplasm injured during labor possibly the result might have been different.

Dr. Joseph Price: The uniform fatality in these cases is largely due to what we are preaching here, the importance of early work. We do want to educate the profession to the importance of calling us to patients before they are dying. This patient was one of these desperate cases. She had been curetted. It was the fourth or fifth day after delivery. This is never fair to the operator. I rose to reply to what Dr. Norris said in reference to seven cases of post-puerperal ovarian abscess and seven deaths. These were all hope-

less cases, he said. We must not look upon them as hopeless. I have two cases now in bed of ovarian abscess, one of ovarian abscess and with suppuration extending from sigmoid to head of cæcum and then involving the right kidney. I removed pus from the left and right; delivered a large ovarian abscess. This was a puerperal case, and operation was done three weeks after labor. She passed from a large general hospital, where she had remained unconscious for two weeks, into my hands. I found three-fourths of the abdomen involved. That woman is getting well now, and I can show you women where the omentum and lower portion of bowel have been almost universally involved, where the application of drainage and surgical care has saved her. I looked upon her and all present also did the same, as a septic, hopeless case. This result has been obtained without a stitch. It was not my fault that this was done the third week, but because she came to my care then. It is the fourth day that is the fortunate day in these cases or even earlier.

Dr. C. P. Noble: It is always easier to see a case after it is all over, and we have the autopsy to assist us in our opinion about it. Dr. Montgomery, after the experience of the abdominal section, realizing the condition of the tumor, felt convinced that the principal difficulty was with the pelvic hæmatoma. Had one of us examined the patient with the tumor behind the uterus, undoubtedly our belief would have been that the high temperature was due to the bruised mass, and our treatment would have been exactly that depended on in the case. At the same time, it emphasizes the importance of studying carefully vaginal lesions. I feel that this subject is neglected.

Dr. Montgomery: In answer to the first question, there is no history in the patient of hemorrhage immediately following labor, as related to me by her physician, but from the napkin shown me upon my visit, it was evident she had been losing quite a considerable quantity of blood. The uterus was large, and showed no disposition to contract. I do not think I have seen in all my experience a cervix as extensively lacerated as this one was, but these lacerations were old. It was recognized that there were vaginal lesions, but I did not observe the opening on the left side until the vagina was being cleansed for the operation, when it was discovered. It is possible that the thin wall may have been broken through during the scrubbing of the vagina. Now, while I believe this patient died as a result of putrid intoxication from decomposition of the thrombus, she had lost a large amount of blood which rendered her powers of resistance much less. I recognized that in subjecting her to an

anæsthetic for removal of the mass and the uterus, it did not improve her opportunity for recovery, but having seen the patient in the first place, recognizing the extensive laceration, and having made a special inspection of the uterus, I recognized the condition of the endometrium as spoken of by Dr. Norris, but did not find any indication of it within the uterus or vagina that should occasion the symptoms from which the patient was suffering. Finding a mass in front of the uterus, whose relations through the thick abdominal walls we were unable exactly to determine, it seemed as if it was possible the tumor had been partially extruded from the uterus during the convalescence, and that the putrid intoxication was the result of changes in its nutrition. I did not attribute the condition to puerperal sepsis, from the fact that the patient had gone four days without an elevation of temperature when it suddenly rose, accompanied with severe chill, and the chill recurred. I must correct the false position in which Dr. Price's remarks would place the attending physician. I was not called to this case late, but within less than twenty-four hours from the advent of the unpleasant symptoms, and the operation was done the next morning, so that but little time was lost so far as that was concerned. In the meantime, the Doctor had curetted the uterus, although the specimen shows that the latter could not have had much effect. The tumor, as I have already said, was not suppurating. Its adhesions were old and not recent, and the clot of blood had resulted from the compression of the pedicle during labor, so that a hemorrhage had resulted behind the peritoneum and extended around in front of and behind the bladder. The space on the left side of the vagina was torn through, so as to enable us to turn out the clot and afford complete drainage for the cavity.

Dr. Joseph Price presented a specimen of ovarian abscess.

You see the pus tube coiled up. Both tubes contained pus and universal adhesions beneath small and large bowel. The uterus was retroverted and firmly fixed. Enucleation was difficult because the left ovarian abscess was largely beneath the sigmoid. Specimens of this character are of interest at present because few operators cling to the old direct methods of enucleation, a method of dealing with an abscess that is always satisfactory. Fortunate would it be if we could enucleate abscesses in other portions of the body as we do in the pelvis. Upon no other point can we enucleate abscesses as we do in the pelvis. At times at the very root of the tube you can cut a V-shaped abscess out of uterine tissue.

As far as my experience goes in suppurating pelvic disease, a much more satisfactory condition remains after removal of the ap-

pendages and repair of injured parts than after extirpation or even amputation of uterus, where the surrounding conditions are filthy and unhealthy. I scarcely think it is wise to make a healthy wound in the midst of filth.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, February 2, 1897.

The President, ROBERT A. MURRAY, M.D., in the Chair,

Fibroids Complicating Pregnancy.

Dr. H. J. BOLDT, in presenting the specimen, said: The woman ceased menstruating in August, and the flow of blood reappeared some time in November. A diagnosis of myofibroma, complicated by myoma was made, and I endeavored to stop the flow of blood, but was unsuccessful. She aborted, and after she had recovered from the intense loss of blood hysterectomy was performed. I simply wish to add in regard to that class of cases, that we should, if possible endeavor to prevent abortion. We all know that a number of cases will go on to termination—about ten per cent.—but in the remaining ninety per cent. of cases of pregnancy, if fibromata complicates the condition, abortion ensues in consequence of endometritis in the majority of cases.

DISCUSSION.

Dr. C. A. VON RAMDOHR: I would like to take issue with Dr. Boldt as to the course of treatment to be pursued in pregnancy complicated with fibroid. He says that ten per cent. of these cases will go to full term, and that ninety per cent. will abort, and at the same time tells us that it is our duty to prevent the abortion. The first question is: By what means? If there is a fibroid in the cervix or the body of the uterus, and the woman has the misfortune to get impregnated, it is of the utmost importance that very vigorous measures should be taken, not only not to bring on the abortion, but to prevent the woman from going on to full term. She has every

chance of having a rupture of the uterus if she does go to full term. We had the subject up at Albany during the last week, but the discussion was not fully reported, and I take the liberty of repeating my talk there. Fibroids complicating pregnancy and reports of the same are rare, and their treatment is still in doubt. The cases are so rare that in 1,200 cases in the Lying-in Department of the Post-Graduate there was none of these. I have personally seen only four such cases, two of which afterwards escaped me, and two of which ended in death. The first woman had a fibroid in the cervix, which was not recognizable by touch. It was discovered after rupture of the uterus at full term. The second case was one where I was called in to deliver the placenta, and found, after having my hand in the uterus, that I could very easily palpate the entire tumor, which was a sub-peritoneal fibroma and as large as the emptied uterus. This totally disappeared during the next six weeks under the use of ergot. She died in a second pregnancy of rupture of the uterus. Dr. Vanderveer was kind enough to report one case in which he had extirpated the uterus. Dr. Polk talked about the matter, but did not say how many cases he had seen, but it seemed that the sense of the meeting was, and it is certainly my opinion, not to try to save the abortion but, as soon as the diagnosis is made, to extirpate the uterus at once at any stage of the procedure, so as not to have a rupture of the uterus.

The President: Before any further discussion is had I would suggest that a more explicit distinction be made between fibroids which may complicate pregnancy. They may be subperitoneal, may involve the uterine wall itself, or may be up in the body in the form of pedunculated polypus. It seems to me we will discuss much more clearly if we make a distinction as to the kind. The case reported is one where the myoma involves the uterine wall, the uterus itself was enlarged very greatly. It was not subperitoneal nor pedunculated. It was a diffuse enlargement.

Dr. Von Ramdohr (continuing): Then I would say, Mr. Chairman, that in any case where the fibroma is not pedunculated, and such cases are extremely rare, and those I will except—in any other case, in the uterus or in the cervix, I would never let the woman go to full term, but would extirpate the whole uterus, including the pregnancy.

Dr. LeRoy Broun: I have not had any personal experience in these cases, but it does seem to me that that is a very radical method of treatment. I can recognize fully that where the fibroid is in the body of the cervix, where we know the dilatation cannot take place, it is necessary to do something and something radical to give the

woman relief, either total extirpation or bringing on a miscarriage before it has gone too far. And I can recognize, too, that where the fibroid is in the broad ligament that the same method of procedure ought to be carried on. But where, as in a large number of cases, they are in the body of the uterus, while I have had no personal experience, I do not believe that that procedure is necessary. I was raised in a country where we had a large number of darkies, and a great many of them have fibroids. It was a common thing—almost as common as a lacerated cervix—to find fibroids in a darkey's uterus. They all went along and had their babies, and would get up four or five days afterwards and go into the field. We do not apply that to the people here, but I believe the method advocated is so radical that we ought not to adopt it.

Dr. H. N. Vineberg: I can only repeat what Dr. Von Ramdohr has said, that they are very rare. I have had a fair experience in gynæcological cases in the dispensary, but among seven or eight thousand gynæcological cases I do not recall a case where there was pregnancy complicating fibroid. I recall a very warm and heated discussion recently in Germany. Dr. Hofmeier took the ground that it was almost never indicated to interfere, and he brought forward a great number of cases in his paper to show that the outcome usually is a favorable one, but he may have had reference to those tumors which are pretty movable. Those cases frequently deliver themselves naturally by the tumor being drawn upwards at time of labor. Then recently a paper appeared on the subject, with a collection of the cases in which myomectomy was done in pregnancy with fibroid, with a very good percentage of recoveries. I think twenty-eight per cent. of these women went on to full term, even where the growth had involved a considerable portion of the uterine substance.

Dr. Joseph Brettauer: I recall a case which came under my observation a few years ago, a woman five months pregnant, with a tumor whose connection with the uterus could not be clearly made out. In fact, several colleagues and myself were in doubt whether we had to deal with a pedunculated fibroid or with a movable kidney on the right side, and decided to wait, as it did not interfere with the woman's condition. The tumor grew so rapidly that at the end of the eighth month it was nearly as large as the uterus containing the fœtus. Still the woman was not disposed to have the thing interfered with, and was normally delivered in the Sixty-first Street Hospital. Three months afterwards I operated on her, and found she had two fibroids, one about the size of two fists. It had shrunk nearly three times its size during pregnancy. The big fibroid

was attached to the right horn of the uterus, and there was another smaller one, low down in the posterior wall of the uterus, which previously we could not feel. I remember also two cases where the women were delivered normally, and had no trouble whatever from the fibroid complicating the pregnancy, but in both cases there was a severe post-partum hemorrhage, the uterus would only slightly contract and soften again. One case which I saw in its ultimate state died and the other recovered. I would like to hear from Dr. Von Ramdohr and others whether it has been their experience that the uteri which have fibroids do not contract as well after delivery as normal uteri, and if there is any reason to fear in such cases post-partum hemorrhage, because that is a very serious complication.

Dr. H. L. Collyer: Fibroids are not alone found in colored people, and I think you will find that a great many women have a fibroid, often undetected, varying in size. Those patients frequently do not conceive, in my experience, so readily as though they did not have the fibroid. In the cases I have had under observation the pregnancy has gone along successfully until labor set in, and then the labor pains have been interfered with, and necessarily you are obliged to use instruments. I remember one case in particular that had a pedunculated fibroid as large as a child's head. I watched the case very carefully, as on one of her previous children craniotomy had been performed, and with another child she had had a voluntary delivery without anybody being present, but in the labor that I attended her in, which was her last labor, her pains were very intense, but the progress of the labor was very limited until she got pretty well exhausted, and by dilating the cervix delivery was easily effected by the aid of forceps. So I deduce from these experiences that where fibroids complicate pregnancy, they interfere with the natural course of the delivery; in other words, it requires usually an instrumental labor. But if you take out every uterus containing fibroids at pregnancy you are going to reduce the number of pregnant women; because it is evident that there are some uteri, even though they do contain fibroids, that conceive, and unless the fibroids interfere greatly with pregnancy, I would think it advisable not to remove them. There is another thing which is to be considered, and that is that in intramural fibroids there is a great predisposition to hemorrhage, whether it is on account of the muscular portion of the uterus being interfered with, or whether it is due to the body contained in the muscular coat of the uterus, I am not prepared to say.

Dr. Von Ramdohr: In one particular case the reason I was called in was because there was a hemorrhage, and the placenta had

not been removed. I once more defer to what Dr. Murray has stated, if it is pedunculated and restricted to the side, but in the other cases the uterus ought to be removed.

THE PRESIDENT: This particular case is exceedingly interesting, and I would have liked to have it the basis of a paper, because there is a very considerable amount of indefinite and diffuse knowledge about what we should do in fibroids complicating pregnancy, just the same as in other complications of pregnancy, for instance, heart disease, and it arises very greatly from using broad terms and not precise ones. Now, if we divide fibroids, as they usually are divided, into fibroids which are subperitoneal, fibroids intramural, intra-uterine fibroids, fibroids which are in the neck, in the cervix and which will become pedunculated, or intra-uterine, or be expelled, we will find that a discussion of the effects of these complications of pregnancy will lead to very different conclusions. First take the cervical fibroids. There are a number of cases on record. I believe if Dr. Tull were here he could narrate a case where a lady had a fibroid in the cervix. He enucleated it and the patient went on to recovery. If the labor had gone on it might have interfered with labor, and he might also, if he had operated at the time of labor, have had a septicæmia from the discharges running down from the cervical wound, it might have been the cause of a fatal hemorrhage, or possibly have got so large that it would have necessitated a Cæsarean section. Then take the case of pedunculated fibroids. In three cases I have taken off pedunculated fibroids from the cervix, and the labor went on without any trouble. It has been very well said that we should carry to labor if it is possible. But there is one thing we must always bear in mind—that one of the greatest causes of incarcerated uteri is posterior fibroids. I have seen four cases. Two that I saw died. The two others I saw early, and restored the uterus by putting the patient in the knee-chest position and pulling down the cervix. Those cases went on and were delivered without any trouble. The cases which died were cases where the patients were pregnant, and had never known they had a retroverted uterus, nor knew they had a fibroid. The first thing that called their attention to it was finding they could not pass water, next they had an intolerable pain in the abdomen, and such pressure that they were forced to send for a physician. When I saw those cases it was absolutely impossible to reduce them. The uterus was in such a state of tenderness that it could hardly be manipulated, even under chloroform, there was an ichorous, foul-smelling discharge from the cervix, which pressed against the neck of the bladder, which was enormously distended. Both those patients were almost in collapse

when I saw them, so much so that it would have been almost idle to have attempted to operate. I was able, by pressing up with the greatest force on the tumor, to budge it sufficiently to empty the bladder, but the patients both died of septicæmia. One had traveled from San Francisco with that trouble, and the other from New Orleans. Those cases made an impression on me, and I made up my mind that I would advise in future cases of this nature what I would assuredly have done in those two cases if it had been possible, that is, take out the uterus. I think it was the proper and the only thing to do in those two cases. In later pregnancy, if we have fibroids in the broad ligament, or in Douglas' cul-de-sac, or developed partially subperitoneally but still in the wall of the uterus, we have still to consider how far the uterus will draw those fibroids up so as to clear the pelvis. Again, they get sometimes so free that you can press them away, so much so that one of our Fellows states he has never met any complication from fibroids in pregnancy, that he was always able, by placing the patient in the knee-chest position, to push the tumor up and deliver the patient, and has never met with hemorrhage but in one case. I said that his experience was exceptional. As to the hemorrhage at the time of labor, the hemorrhage is a thing that is very difficult to control, but generally it can be controlled by doing what we do with hemorrhage apart from pregnancy, that is, tamponing the uterus and making pressure on it. I think in most cases it can be controlled. But even when we get through the confinement we are not through with these fibroids yet. They sometimes absorb, but very frequently when intramural they break down and slough, and the patient has a fearful puerperal infection. Then you do not get through with the case without extirpation of the uterus if you want to save the patient's life. So that if a fibroid involve the wall very seriously, and if there is any chance of its becoming incarcerated in the early months, and if, beside, that the patient has had children so that the chances of her going to full term and having a Cæsarean section or Porro operation would not be wisely run, in such cases what Dr. Von Ramdohr advises would be the best treatment, and that is, to entirely extirpate the uterus. But I must say that in the five or six cases that I have seen that have gone through to full term I have only twice seen a severe hemorrhage. I have seen four cases of incarcerated uterus, and two of them were lost. In two of them the tumor has almost disappeared. In this connection I would like to ask Dr. Boldt if it would not have been wiser to have waited after the hemorrhage had ceased to see whether the fibroid would not disappear.

Dr. VINEBERG: I would like to make a correction. I now re-

call a case where a woman had already aborted, with a child of about four months, when I was called. The physician said he thought there was another child inside of the uterus, and on examination, I found extending into the cavity a large fibroid about the size of a child's head or perhaps larger. The case was septic then, and she was operated on by a very able surgeon, but died about forty hours after the operation from septicæmia. The tumor, on being cut open, was found to be full of pus. The case is a little hazy to me now, but I think the thing had been going on about six or seven days, and she had been having a temperature of 102° or 103°. I advised immediate operation, but I do not think it was done then, and when she was operated on it had undergone suppuration.

Dr. Boldt (in closing): With regard to this particular case, the reason I did not wait any longer was because hemorrhages began to recur. Twelve years ago I held a somewhat similar view to that expressed by my friend, Dr. Von Ramdohr. As has been remarked, the cases are exceedingly rare, but I was fortunate enough to get hold of a woman who was pregnant, and fibroids complicated the gestation. I was very anxious to remove the pregnant uterus, and I did so. Since then, however, I have changed my mind. As far as fibroids which complicate pregnancy are concerned, it has been remarked by the chairman, which is very well taken, that we must make a very decided difference with regard to the site of the fibroid. We know that sub-peritoneal fibroids, with the growth of the uterus, even if they are in the pelvis, are very frequently drawn out of the pelvis, and offer no obstruction to labor. It is certain that a majority of the cases, if they have not aborted before the fourth month, will go to full term. I do not see why we should take out a woman's uterus because we fear that certain accidents are going to happen during her parturition. I should be inclined to be a trifle more conservative and wait until the accidents happened, and then be ready for the emergency. We do know that such accidents will occur. We do know that we will have such hemorrhages, and especially in the case of interstitial and sub-mucous fibroids, but the hemorrhages can usually be stopped by the methods that have been spoken of by Dr. Murray. I should never take a case of this kind in private practice unless I was ready to do a radical abdominal operation during labor, because we are liable to have a tear at the point of the junction of the muscular fibers with the tumor. I committed myself to a wrong statement when I said we should prevent abortion. I know that in a great majority of cases abortion will occur, but what I meant to say was that we should not produce an abortion. I am absolutely, under all conditions and circumstances,

opposed to the production of abortion because the woman has a fibroid. If the fibroid causes trouble we can always work when it has arisen; why beforehand? With a fibroid in the broad ligament or cervix proper I should allow the woman to go to full term. I should never attempt to do a craniotomy on a living child, or to use forceps or do a version unless I was satisfied I could accomplish the result desired, but I should open the abdomen and do a radical operation from above. I do not believe the Porro operation is the proper one to perform. You will please remember that when Porro commenced doing his operation we did not do the pan-hysterectomy, and we did not do much intra-peritoneal treatment of the pedicle. Why should we, in this particular form of operation, do otherwise than with fibroma under other circumstances? I should say remove the uterus entirely. It can be done with consumption of very little more time, perhaps no more at all. Therefore, as far as the treatment of fibromatous tumors, complicated with pregnancy, is concerned, I should put myself on record as being in favor of a more conservative form of treatment, but I should invariably do a radical operation from above, should the circumstances at the time of the labor demand it. When sepsis is present after normal delivery in such uterus I would do a radical operation, rather than lose time with other treatment.

E. B. W., aged thirty-three years, married nine months. Had several gynæcological operations performed, finally finishing with a vaginal hysterectomy two and a half years ago, since which time she has been free from physical ailments. Soon after marriage she began to have symptoms of pregnancy, and having been informed by me before I performed the hysterectomy what the consequences would be, she consulted a physician in her locality, who assured her of pregnancy being present. For the purpose of showing the influence of the mind over the physical condition, therefore, I beg to report the case: Morning sickness, swelling of the breasts, shooting pains through these glands and enlargement of the abdomen are present and, in addition, the mammæ contain cholestrum.

Dr. Boldt also related a case of

Mental Influence in Supposed Pregnancy.

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Discussion.

Dr. Collyer: There is no mistake about it, you can influence people's minds to such an extent as to produce an extra amount of secretion. I had that illustrated in one patient in particular, where she had nursed for a certain length of time and the milk diminished. Under mind influence her breasts filled up with milk, and she was permitted to nurse her baby several months longer than she otherwise would. It is a known fact that some women can be influenced to believe a great deal. I do not know whether the doctor's case was really one of mind influence, or whether she had such a great desire, as we know there are cases on record where they imagine they are pregnant, and go through the whole schedule until labor should set in, and it is then found to be imaginary. I have in mind one case in particular that has gone through that stage twice, and she was told by her physician that she was pregnant. Her abdomen was swollen, and apparently she was progressing very nicely in pregnancy, when apparent labor set in and nothing came from it. She has her tubes and ovaries and her uterus, and her uterus is a normal-sized one.

Dr. Boldt: This patient, I think, thought I had not performed the operations I did perform. Some years ago I removed the annexa and uterus. She was assured by her physician in the country that she was pregnant, and she was happy to be in that condition, and to substantiate her views I have in my possession a letter which she wrote to her physician. So that it was undoubtedly the mind which influenced the physical condition.

A Case of Hœmatosalpinx.

Dr. Le Roy Broun: Mrs. R. V., aged 21, married three years, one child a year after marriage. She was regular in her menstruation up to three months previous to entering hospital. Since then she has been flowing irregularly at intervals of two weeks, excepting for the last six weeks, when the flow has been constant, with the

following history: First there was a sharp pain in the pelvis, preceded by a vaginal flow. The pain was sufficient to put her in bed and continued for a week, during which time she remained in bed. The severe pain ceased, yet the flowing continued for the stated time of six weeks. When seen the local condition was as follows: Uterus forward, enlarged and pushed to the right by a mass in the left fornix of the size of a large orange. The uterus and mass adherent and but slightly movable. There is no longer any uterine flow. Operation November 23, by abdomen. The intestines were loosely but abundantly adherent to the mass on the left. After separating the intestinal adhesions the tumor (the sac of which was formed by exudation) was ruptured and some eight ounces of old clotted blood removed. The tube and ovary were removed, as was also that of the opposite side and the uterus, both being diseased. The patient's recovery was uninterrupted. The pathological examination by Dr. Geo. C. Freeborn proves the specimen to be an *hæmatosalpinx*. I report this case on account of its being an hæmatosalpinx and not a ruptured tubal pregnancy, as the history and the appearance of the parts at the time of the operation would lead us to suppose.

Discussion.

Dr. Collyer: I cannot conceive what would produce the hæmatosalpinx. I have always been led to suppose and believe that where there was a ruptured tube it was invariably due to an ectopic gestation or tubal pregnancy. So far as this is concerned, what would produce the rupture if it were not a tubal pregnancy?

Dr. Broun: There was no rupture.

Dr. Collyer (continuing): I understood there was a rupture into the cavity. Under those circumstances the case is very interesting, and I would be inclined to believe that there must have been some error in the miscroscopic examination, that there was an impregnated ovum.

Dr. Vineberg: The case is of a great deal of interest, and I think in the future if the doctor should meet the same condition he would be justified in making a diagnosis of extra-uterine pregnancy, and in perhaps ninety-nine cases out of a hundred he would be right. I operated about six or seven months ago on a girl who had an ovarian cyst on the right side. The tube and ovary on the left side were hopelessly diseased, and were also removed. The tube was filled with caseous matter, and the ovary was cystic throughout. The patient went on very nicely, but about the tenth or eleventh day was seized with pain in the pelvis and began to develop temperature.

I examined her bi-manually and found quite a large mass behind the uterus and extending upwards to above Poupart's ligament on the right side. The temperature still continued, and she was having a good deal of pain and, under an anæsthetic, I made an incision over the mass above Poupart's ligament, and a large quantity of dark blood escaped. Still the mass behind the uterus was not any smaller, and I could not get down through the incision behind the uterus. I made another incision behind the uterus, and there also let out a large quantity of dark blood. I examined carefully to see whether there was any communication between the two cavities, and could make out none, either with probes or with fluids. Here was an instance of a double hæmatocele forming after an operation, without any possibility of a pregnancy. I believe Tait has reported similar cases, but I cannot recall any others in the literature.

Dr. BRETTAUER: The history given to us by Dr. Broun is just about the same as that of a case I saw last May. The physician in charge had made a diagnosis of extra-uterine pregnancy and rupture. The patient had suddenly, in the night, all the symptoms of internal hemorrhage. She was pulseless the next morning when I saw her. We stimulated, operation being out of question at the time. She rallied during the day, and in the evening her pulse was fair. On the fourth day when we examined her we found all the conditions which justify a positive diagnosis of extra-uterine pregnancy. We operated the next day, opened the abdomen and found quite a considerable amount of fluid blood. The right tube was normal in size in its first and in its third third.. The second third was distended about the size of a big walnut, and one could see that the walls were very thin, that it would not have taken much of a contraction of the tube to have resulted in rupture, but there was no rupture. I tied it off, removed it and sewed it up. When the pathologist opened this mass carefully we were surprised to see a solid blood clot. There was no sign of a fœtus. Two or three pieces of the wall of the tube were examined microscopically, and showed a very much distended and atrophied condition, but no new tissue was forming, no sign of pregnancy to be seen. I had serial sections made so that we would not overlook anything if it was there. The result was negative. The explanation of this case I am not prepared to give. I am still doubtful as to its origin.

Dr. BOLDT: I have had several cases of that kind. One was gonorrhœal salpingitis, and instead of being the suppurative variety it was a hæmatosalpinx. The reason why I am so sure of that was that the woman came to me with an active gonorrhœal infection. The tubes were at the time apparently normal. Two or three weeks

after that I examined her again, and to my surprise we found a large tumor there. I aspirated that and removed the accumulated blood. The second case was one I saw two or three years ago, a woman who had been curetted by one of my house staff. She had been discharged, and said that she had not laid herself liable to become pregnant. In that case I removed a very large haæmatosalpinx and drained an hæmatocele. If I may be permitted in this connection, I would call attention to a case that I reported in 1890, in Berlin, of a hæmatoma of the ovary which had also ruptured and given rise to trouble which necessitated abdominal section. There was no indication of pregnancy in that case.

The President: At the time that Mr. Tait made this statement that hæmatosalpinx was always due to extra-uterine pregnancy, either tubal or outside but particularly tubal, he said that one reason we did not always find it was because the examination was not carefully enough made to find some product of conception. That statement was, as you know, taken very severely to task by the discussion in the Obstetrical Society in London or in the British Medical Association, but the majority of men who have operated on extra-uterine pregnancy, since have more or less accepted Mr. Tait's statement as absolutely true, so that the general feeling now is that there is only one cause, and that is extra-uterine pregnancy. But I think if we examine the cases we will find that there are many that do not go to operation where you cannot get a history of pregnancy. Of course, the cases that come to operation are generally severe cases. The case here is unique in this respect, that there was a hæmatosalpinx in an unruptured although a distended tube, and there was no evidence of pregnancy. Whether there might not have been obtained evidences by curetting the endometrium, as that was not done we cannot say.

Dr. Vineberg: You may have a serious hemorrhage from extra-uterine gestation without any symptoms at all. The woman may not even have passed a period. I know of a case where a woman had her periods regularly, and seventeen days after her last menstruation had a profuse abdominal hemorrhage, from which she died, and it was found to be a ruptured tube. The point is that there may be an entire absence of any symptoms of pregnancy, and the first symptom may be an abdominal hemorrhage of greater or less severity.

Dr. Broun (in closing): The reason I reported the case was because it presents the history of a diagnosis where you depend altogether on one line of symptoms. I do not believe we can make a diagnosis of ectopic gestation simply on that line. We must take

the other symptoms into consideration. The pathologist did not report on the uterus, but I will ask him further about it. He stated to me that he made a thorough examination of the tube and found nothing to indicate ectopic gestation. He further remarked, incidentally, that in his experience in examining so many of these supposed ectopic gestations that it was not at all uncommon for him to fail to find it, and he thought himself that many of them were mistaken diagnoses, that they were not ectopic gestations, that the presence of clotted blood, together with a diseased tube, did not indicate ectopic gestation.

Official Transactions.

A. M. Jacobus, *Recording Secretary.*

Stated Meeting, February 16, 1897.

The President, Robert A. Murray, M.D., in the Chair.

Old Case of Cæsarean Section; Hydronephrosis from Pressure of Fibroid Tumor on the Ureter; Death from Exhaustion.

Dr. H. Coe presented a specimen with the following history: Mrs. H., aged forty-two, had been under the reporter's observation for thirteen years. She was first examined at the Polyclinic when she was a regular attendant at the clinic for several years. At that time she had an extraperitoneal fibroid, the size of an English walnut, situated extraperitoneally in the vesico-uterine pouch, which gave rise to few if any symptoms. It grew slowly, and there seemed to be no indication for interference. The speaker lost sight of her for two or three years, and in 1890 was asked to assist at an abdominal section upon the patient at the Infirmary for Women and Children, on account of a cystic tumor in the region of the right kidney. This was found to be an hydronephrosis the size of an orange, due to pressure on the right ureter, which was dilated throughout its entire extent. When traced into the pelvis it was seen to be compressed by the fibroid, which had increased three times its former size. An unsuccessful attempt was made to enucleate the fibrous tumor. The kidney was not disturbed. As a result of the manipulation the pressure was relieved. The patient had a gush of urine, and the hydronephrotic enlargement disappeared. The patient made a good recovery, but a year later the reporter performed

Cæsarean section successfully on account of dystocia, caused by the intrapelvic growth (for full report of operation see Trans. Am. Gyn. Soc., vol. xvii). The patient was kept under observation for three or four years, during which time she enjoyed good health, and the tumor did not grow. She always refused to have it removed per vaginam, which could doubtless have been done without much difficulty. The speaker was called to see her three weeks before, and found that she had been ill for a week with vomiting, obstinate constipation and high temperature. On examination the tumor was found to have increased in size, so as to nearly fill the pelvis, while at the site of the right kidney was a cystic swelling as large as a man's head. The abdomen was considerably distended, but not tender. The patient was greatly emaciated, with a rapid, feeble pulse, and a temperature of 103° F. She was removed to the hospital, where she remained for two weeks, during which time she gradually became weaker, though her pulse and temperature was nearly normal, vomiting at frequent intervals. The daily amount of urine was about forty ounces, containing albumin, blood and pus, but no casts. The diagnosis lay between pyonephrosis, due to intrapelvic pressure and malignant disease, but at no time was it deemed advisable to attempt an operation. At the autopsy universal intestinal and omental adhesions were found. The right kidney was transformed into a cystic tumor containing at least a quart of turbid fluid. The corresponding ureter was dilated to the size of the little finger. The left kidney had also undergone cystic degeneration, though the ureter was not compressed. The tumor proved to be a fibroma situated between the cervix uteri and the posterior wall of the bladder, but not intimately attached to either. It could have been enucleated without injury to either the ureter or the bladder. The uterus was small, and showed distinctly on its anterior surface the cicatrix remaining after the Cæsarean section. The interesting points in the case were: 1. The serious results due to the presence of a small fibrous tumor when so situated as to compress the ureter and also the resulting dystocia. 2. The importance of removing such tumors, especially as they are usually easily accessible by the vaginal route. 3. The fact that the hydronephrosis was at one time relieved by simple manipulation of the intra-pelvic growth. 4. The long period during which the patient was under observation and the absence of symptoms until a few days before her death.

Discussion.

Dr. J. E. Janvrin: I have seen one small fibroid tumor located exactly as that is. It was much smaller, probably not larger than a

big goose egg, and I attempted to remove it through the vagina. I found it utterly impossible to do it without injuring the bladder, and although I made a pretty good dissection and cut around the lower point of it, still I was so fearful of going into the bladder and doing more damage than I wanted to do, that I prudently backed out. It was in a young woman probably twenty-six or twenty-seven years of age, and she went home to Vermont after the attempted operation. I heard from her at least two years subsequent to the operation, and the symptoms from which she had suffered, the irritation, etc., diminished from the time of the attempted removal. Whether the tumor diminished in size or not I do not know, because I have never seen her since, but the symptoms diminished, and the presumption is that the tumor itself took on a retrograde rather than a progressive action. That is the only time I ever tried it, but it is a pretty difficult thing to enucleate even a small fibroid from that position, crowded down between the cervix and the posterior wall of the bladder without injuring the bladder. I did not attempt in that case to remove it from above because it was so small I thought it better not to do so.

Dr. E. B. Cragin: It simply shows how each case has to be judged by itself. Some of them are comparatively easy in their enucleation. Two of them that have happened to come under my observation have been comparatively easy. The bladder stripped up without any difficulty nearly to the fundus, enabling me to enucleate the fibroid and leave it all extraperitoneal. I can see, however, that the bladder might be so adherent as to make it very difficult.

Dr. H. T. Hanks: We are never sure just what we are dealing with if we depend altogether on what we have learned from books and a few cases. Often we do not know the exact locality of and origin from which one of these tumors starts unless we see it early in its development. I have had two or three cases that have puzzled me very much indeed, and one in the past year where I found a tumor that was quite as large as this, and I thought I could take it out from the vagina easily, and went prepared to do so. But after ether narcosis I decided to operate from above and did, and was surprised to see with what ease it was enucleated from the bladder and the anterior wall of the uterus. Another case in point was a woman on whom I operated in my private hospital. She was also seen by Dr. Thomas, by Dr. Thomas Addis Emmet, and one or two other gynæcologists of New York. At that time we were not doing our hysterectomies as much as we are to-day, and I was advised by all the gynæcologists who saw this young woman to delay operation.

It continued to grow, however, and caused much dysuria and bladder annoyance, and I was convinced I ought to operate and do what I could. I opened the abdomen and found a pedunculated fibroid, with a pedicle not larger than my little finger. The operation was not twenty minutes in duration, and she convalesced perfectly satisfactorily. This tumor was so tightly incarcerated between the uterus and the bladder that it was impossible for Dr. Emmet or Dr. Thomas or myself to know before operation what the character of its attachment was.

Dr. G. M. Edebohls: An interesting point in connection with this subject is the fact that the same compression of the ureter which has led in this case to enormous dilatation of the latter, is often found associated with intraligamentous fibromata, which frequently displace and compress one or both ureters. I had one experience with intraligamentous fibroma compressing one ureter so as to lead to well-marked hydronephrosis of the same side, so much so that when I had removed the fibroma I considered the advisability of removing that kidney at once, the abdomen being open and the kidney easily accessible, but the woman had already undergone a serious surgical procedure, and I did not dare to add another to it. Much to my surprise, this patient's kidney, to all intents and purposes, became entirely well, its size was reduced to normal, the urine never afterwards showed that there was any abnormality in the renal secretion or the action of the kidney, and the woman is alive and well to-day. It leads to this practical proposition, that in a case of hydronephrosis, due to compression of a ureter by a tumor, it is well to wait and see whether the kidney will not recover its normal condition before you remove it.

Dr. G. W. Jarman: This is a case that is peculiarly interesting to me, because I had an opportunity of seeing it at the time of the Cæsarean section, and recently, and at the time of the autopsy. One point in regard to the operation Dr. Coe has forgotten, because it was of little moment, and yet it impressed itself upon my mind. As we all know, in Cæsarean section some one is supposed to control the hemorrhage, and that was Dr. Grandin's work. He had armed himself with ordinary soft rubber tubing, a very frequent method of controlling it, and after he passed this rubber tubing around I saw at once, standing as I was, that this fibroid tumor which was in front of the uterus had raised the peritoneum up to such an extent that the rubber tubing was cutting into it, and the woman was bleeding from that point. Calling attention to that, Dr. Coe asked him to remove the rubber and control it by his hands, which he did without any trouble at all, so that when Dr. Coe opened the uterus the

hemorrhage was controlled. A remarkable thing to me at the time of the autopsy was this, that when the first incision was made the gut and omentum both were adherent to the anterior surface of the belly, so that the gentleman who was doing the autopsy encountered the intestine in going in, and I advised him to make a higher incision. Even then he found the omentum adherent. He rapidly stripped off all the intestinal and omental adhesions. Not only were they adherent to the belly wall, but they were adherent throughout, and for a time I thought the dilated ureter was a piece of intestine. The hydronephrotic kidney was adherent, and was with difficulty enucleated. To obtain the specimen as well as we did it necessitated opening the symphysis and working down in front of the bladder. There is one strange thing. I have not seen the specimen since the day of the autopsy until this evening, but the bladder was so full of urine—containing probably six or eight ounces, that it was blocking the way—and I suggested the advisability of tapping the bladder, and really I am surprised to see that tumor is outside of the bladder, because it looked to me at the time of the autopsy as if it was growing from within. We attempted to get out the other ureter, but there were such dense adhesions, and that ureter being of normal size was so small, that it was impossible to obtain it.

Atresia of the Vagina; Pyosalpinx and probably Intraligamentous Myofibroma.

Dr. H. J. Boldt presented the patient, stating: I present this patient as showing that we may have very gross pathological lesions in the pelvis without producing any symptoms whatever. The only symptom of which the patient complains is that on several occasions her menstruation has ceased for several months. On examination I found atresia in the upper portion of the vagina. The only opening present is a small one, less than the size of a pin-head. The uterus, with a small fibroid, is a little to the left of the median line, and on the right side of the uterus is a tumor. Upon pressing it two or three days ago, I found pus coming from the small opening in the vagina, with a slight diminution in the size of the tumor subsequently. On the other side of the uterus is also a tumor, which is probably intraligamentous. If the president will appoint a committee to examine this patient I will then show a specimen bearing on the same subject.

The President appointed Drs. Janvrin, Edebohls and Hanks a committee to examine the patient.

Discussion.

Dr. Coe: I would like to inquire whether any of the gentlemen present have had this result following an ordinary curettage: Patient a young woman about twenty-five years of age, with an anteflexion and dysmenorrhœa. Curetted in the ordinary manner, with gauze drainage, fifteen months ago. She menstruated four or five days after the operation, and has not menstruated since. She feels perfectly well. Examined her two weeks ago, passed a sound and found nothing abnormal, the uterine cavity measuring two and one-half inches. Such cases have been reported, and usually have been ascribed to super-involution. It is possible that there is either an atrophy of the organ, or the endometrium is not reproduced as usual.

Dr. Cragin: I have one patient under observation now who is approaching the same condition. While formerly she menstruated about a week, since the curetting done by a member of this Society it has gone down to one or two days. It seemed to me that the endometrium was so much removed that there was very little left there.

The President: It raises the question as to the blunt or sharp curette. I have seen one such case.

Dr. H. L. Collyer inquired how many months this condition had continued.

Dr. Coe: About a year altogether.

Dr. Collyer: I noticed in a few of these cases where there was not a thoroughly-developed uterus that the curettage in some instances produced a super-involution, and led in one case to an endometritis which caused a discharge for several months almost continuously. That uterus was normal in size, and after curettage she failed to menstruate for about eight months, and menstruated irregularly after that. I think it is on account of some injury to the glandular portion of the endometrium, which produces a super-involution.

Dr. Jarman: It brings up one or two interesting points. First, what is the causation of menstruation, and secondly whether menstruation is simply a throwing off of the superficial epithelium of the mucous membrane or of all the mucous membrane, and if that is the case, what reproduces the mucous membrane, and why was it not reproduced in Dr. Coe's case? It seems to me that it matters not how much a person may curette, we cannot ascribe it to the fact that it is an absolute destruction of the mucous membrane, because it extends into the tubes and should be reproduced. The uterine

glands contain similar mucous membrane, and it would be impossible to scrape them out without destroying the muscular structure, so that it seems to me that it can hardly be ascribed to curetting. I can readily understand from what Dr. Pryor says that a very thorough cauterization would destroy the tissues so deeply and cause such an amount of cicatricial tissue that there would be none to reproduce. It is a very interesting point that he has raised, and one that would bear a great deal of discussion and study.

Dr. J. Lee Morrill: I would ask whether Dr. Coe tried electricity for bringing on menstruation in this case.

Dr. Coe: I did, but my idea was that it was a reflex condition, and I always supposed and still think that it will return eventually, because the woman is perfectly well and the uterus is normal.

Dr. Morrill: I had a case some years ago that ceased menstruating for eight or nine months, following curettage, and finally, after four or five months, I succeeded in getting the woman to menstruate by using a Faradic current.

Dr. Janvrin: I would report on behalf of the committee that the description given by Dr. Boldt seems to be perfectly correct. There is an absolute atresia, as far as you can tell by the finger, and there is a large mass on the right side that seems like a large pyosalpinx. On the left side, up in the left broad ligament, is what I should take to be a fibroid.

Dr. Edebohls: That description tallies with what I found.

Dr. Hanks: And with what I found also.

Dr. A. F. Currier inquired whether the atresia were congenital.

Dr. Boldt: It is.

Dr. Currier: I had a case on Saturday of atresia of the vagina, following labor, and in which extensive sloughing of the uterus and vagina had resulted. The entire lower part of the uterus had sloughed away, and the upper part of the vagina. The remaining portion of the vagina was about an inch to an inch and a half long, and the portion of the uterus which remained had contracted so that it was only about as large as an English walnut. Notwithstanding the patient had suffered so much, and this had a bearing on what had been already stated, the woman menstruated perfectly, as well as she did before her labor, and seemed to be in excellent physical condition.

A Specimen of Gross Pathological Lesions Without Symptoms.

Dr. Boldt: Th reason I operated on this patient was because of a mistaken diagnosis. I think you will probably agree with me

when you feel the tumor here; it is exceedingly fluctuating. I considered that it was a fibromyomatous uterus, and in connection with that an ovarian cystoma, which was closely adherent to the uterus, and if you will feel the larger tumor you will find that it has precisely the same feeling. The operation was an exceedingly complicated one. Here we have the cervix, here is the anterior surface of the tumor, there is the ovary, with a hydrosalpinx; on the posterior surface is the other tube and ovary. (Indicating the different parts of the specimen). This part of the tumor was wedged down into the cul-de-sac, is also soft, leading me to believe that there was probably suppuration present. The bladder was drawn upon the anterior surface of the tumor, and one side drawn up to the extreme upper limit of the neoplasm. On opening the tumor I found that it is soft myoma, giving rise to distinct fluctuation, and leading me to make a mistake in diagnosis. There were no symptoms present, and the only reason I operated was because of the diagnosis made. Believing we were dealing with an ovarian cystoma in connection with a fibroid, and as the patient was going far out West, I hardly considered it prudent to let her go back there with the diagnosis made in that way without doing something for her. So here then we have, as an *indication* for removal of the fibroid, a mistaken diagnosis.

Dr. Boldt also presented, because of its excellent condition,

A Specimen of Unruptured Tubal Gestation, with Tube and Ovary Connected with it.

He presented also

A Specimen of a Utero-Tubal Mass.

Dr. Boldt: This woman had a ruptured ectopic gestation into the broad ligament on the left side, the sac seemingly beginning to suppurate. I had intended to remove the left annexa only, but when I got into the abdomen I found that the intestines were matted together very firmly and extensively, and also on the right side a pyosalpinx, which ruptured during my attempts to enucleate it, owing to the adhesions above and the impossibility of enucleating it from above without running the risk of infecting the entire peritoneal cavity, abdominal compresses were at once packed over the pelvis so as to roof it off from the general peritoneal cavity, preventing any further escape of pus, and the uterus and annexa were removed from below, which I considered under such circumstances to be decidedly safer than to continue to work from above, enucleating that way and thus getting the peritoneal cavity infected.

The Selection of Operation in Cases of Cancer of the Cervix Uteri and of the Uterus also.

By J. E. Janvrin, M.D.

(See page 524.)

Discussion.

Dr. John Byrne: I regret very much that some one whose opinions touching the choice of operative methods for uterine cancer were less pronounced, had not been selected to open the discussion this evening, rather than one who is known to entertain very positive and settled views on the subject. The question now submitted for our consideration was fully discussed four years ago, and again in my paper read at the last meeting of the American Gynæcological Society. In fact, the arguments and clinical facts then submitted in favor of using the electric cautery for super-vaginal excision of the cancerous cervix and thorough cauterization of the excavation by which incipient disease, should such exist in outlying parts, may be destroyed, leave me practically nothing further to say. In my review of the statistics of vaginal hysterectomy for cancer I endeavored to show that no reliance whatever could be placed upon the records, and where they were not of a nature sufficient to condemn their life-curtailing operations, they were either worthless, misleading or Delphian in their ambiguity. I showed, moreover, that the value of all statistics, and especially of those affecting the question as to the benefit derivable from surgical interference in cancer of the uterus, must depend largely upon the proper classification of the cases, the character of the material submitted for analysis, and the accuracy with which certain facts had been observed and noticed, not only previous to, during, and for a brief period following operations, but for a reasonably long time thereafter. For example, I might state simply as a sample of many if not the great bulk of all these so-called statistics, that a gentleman at the International Congress in Rome in 1894 reported twenty-four cases of vaginal hysterectomy for carcinoma thus: Two cases relapsed at five months, two at six months, one at ten months, one at fourteen months, two at sixteen months and three at seventeen months, in all twelve relapses, and he ends his report by declaring that no less than 16 per cent. were cured! We can get no information from such statistics—none whatever. The subject of Dr. Janvrin's paper, I need hardly say, is one of deep interest and great significance, not only to every gynæcologist, but also and above all, to a large and most important

class of suffering humanity. Any disease which is annually claiming its victims by the thousand and depriving many homes of a mother's love and watchful care, is one which should demand from us the most thorough and unbiased thought and investigation.

Hence, I heartily welcome this latest contribution from an able, painstaking and conscientious worker, one who prefers vaginal hysterectomy to amputation of the cervix, not only after the worse than useless but now happily obsolete method of Schroeder, or in fact, by whatever means or method, for cancer of the cervix uteri. In other words, while failing to appreciate or take account of the many and singular advantages of the electric cautery, as for example, the destructive effects of excessive heat on diseased parts outside and beyond the line of excision, to say nothing of the positive safeguard against sepsis and traumatic infection, he believes that in cancer of the cervix it is better to remove the entire organ than trust to excision of the diseased part only by whatever means. This, gentlemen, as you must see from the scope and drift of the paper, is the sole bone of contention, and the entire question in a nutshell. While thanking Dr. Janvrin, therefore, for his fair and friendly allusions to my own work, I cannot but express surprise, every allowance being conceded for incredulity on the part of many, that some of our confrères had not yet given electro-cautery that degree of practical investigation which might entitle and enable them to refute or confirm its claims or my clinical records. That the trouble attending surgical work of this kind is considerable must be admitted, and this one fact alone will go far in accounting for its failure to become popular in this country or elsewhere. Indeed, when operating in Salpetrière and the International Hospitals in Paris during the past summer, I surprised some enthusiastic French surgeons by stating that galvano-cautery had not only not become popular in this country, but I doubted if it ever would be, and in spite of results to which no other means or method can justly lay claim. A few years ago, at a meeting of this Society, a gentleman present by invitation, after this subject had been talked over a little, remarked to me that it seemed to him somewhat paradoxical to claim that the removal of a portion of a diseased organ should give better results than the removal of the whole. At the time I had not given the matter very much attention from that standpoint, and I said: "I do not know, sir. I am simply dealing with facts." Since that time I have thought a great deal on the subject, and knowing the destructive effects of intense heat on cancer cells or germs in outlying tissues, I made some experiments which I shall merely outline. I took a piece of a round of beef, tightly bound with a cord so as to keep it

in shape, and put a thermometer in the center, the temperature of the mass of beef being 60° F. only, and its diameter about two and one-half inches. I then took a cautery knife, brought it to a proper heat, and slowly and repeatedly carried it over a line nearly a centimeter from the thermometer, at the same time protecting the latter from the effects of radiating heat. I made a similar incision the other side, and before I got through with the second incision, probably three-quarters of an inch deep, the thermometer registered 143°, being an increase of 80°. What it would be under ordinary circumstances during the operation I can hardly imagine, but it must be very high. Several friends have suggested to me that possibly the current has something to do with the extraordinary results which I have obtained, but I am not yet prepared to say. Nevertheless, while going through the experiment just stated, I thought I would see what effect the derived current might presumably show at some distance from its course through the electrode. I presented my dome-shaped instrument towards the galvanometer, and when it reached within two inches of the instrument the needle was immediately deflected 45° and over. Whether this derived radiating current from the instrument heated by the galvanic current has any influence on the parts I cannot say. Probably future experiments may warrant some conclusion in that respect. There is no doubt but that the mere excision of the diseased part is not the sole cause of the long respite from recurrence which I have observed. It is what is done to the seat from which that is removed, because I invariably go over the excavation with the dome-shaped electrode repeatedly until it is thoroughly roasted and perfectly dry. I would like to ask the gentlemen present whether the favorable results obtained by my friend, Dr. Janvrin, have been obtained by others as well, or whether they, like some I have heard of on the other side of the water, have become thoroughly disgusted with vaginal hysterectomy as a radical method of cure of cancer of the uterus. I have watched very carefully these operations by various operators, not only here but abroad, and I must confess that the operation of vaginal hysterectomy—I do not care in whose hands it is done—has ever struck me as a most unsurgical operation. There is another point which is of importance to note, and this is, it has been clearly shown that after vaginal hysterectomy the vast majority of relapses take place in the cicatrix, Winter having found that in 58 cases 54 of the relapses occurred in the cicatrix; whereas, in my experience, it is extremely rare to find a recurrence in the cicatrix after excision by galvano-cautery.

Dr. Coe: I must confess that I have been won over almost completely to Dr. Byrne's views, so much so that since last fall in

almost every suitable case which I have had at the Cancer Hospital I have asked him to operate. I have always been impressed with the fact that the mere removal of the uterus is a very small part of the operation, that what is desired is not the removal of the diseased organ but the destruction of the outlying foci of disease. It is not always our unfavorable cases in which the early recurrence takes place. I can recall cases with an apparent infection of the perimetric tissues in which the patient is alive and well at the end of two years, whereas in others in which the conditions were supposed to be perfectly favorable, as far as any one could tell, there would be a relapse in a year. Even the radical operation advocated by Dr. Polk does not always promise a long immunity from recurrence. So that what counts is not the removal of the visible, palpable disease, but the invisible and impalpable, and that is what has appealed to me in Dr. Byrne's method which aims at the destruction of the outlying cells by the heat. As a member of the committee of the American Gynæcological Society, appointed to investigate Dr. Byrne's operation, I have determined to use every means in my power to test his method, and I hope that others will do the same. What we wish to find is the best method which gives the best ultimate results.

Dr. Boldt: I have been very much interested in the remarks of the gentlemen, and I was especially interested in the experiments that Dr. Byrne made with the piece of meat. I believe I suggested it to him. Of course that settles it as far as the destructive power of the cautery is concerned, but I cannot understand how other structures in such close proximity to the cautery will stand such an intense degree of heat, but the "proof of the pudding is in the eating" and, as he has not had any accidents, that should be satisfactory. I must say that my own results in vaginal hysterectomy, barring the cases of so-called "cauliflower growth of the cervix," have been very favorable, but in that class of cases where we have patients who are young and who have cancer of the cervix, I feel like a great many others about the ultimate results, and it has seemed to me that it is useless, and in a great many cases the disease will—I cannot say recur, for in the majority it is not a recurrence but a continuation of the disease. The destruction which is caused by the knife in doing a vaginal hysterectomy is not sufficient. I believe in that particular class of cases the results which have been shown to be obtained by the galvanic cautery are far superior to anything we have hitherto done, and I do not see if the results are so extremely favorable in malignant disease of the vaginal portion of the cervix, why the same result should not be obtained in all cases of cancer. I am

speaking in theory, because I am in the same position that the reader of the paper is, I have had no experience. My own position at present is: cancer of the body, and of the mucous membrane of the cervix, my results in vaginal hysterectomy have been favorable. In cancer of the portio-vaginalis in young subjects the ultimate results have been nil.

Dr. CLEMENT CLEVELAND: Of course, I understand that in expressing our views on this subject we cannot speak as the result of personal experience. I have been much interested for a number of years in Dr. Byrne's work, and have regretted that I have not been able personally to observe it. There can be no question that we all feel that Dr. Byrne has achieved great results, and I hope myself to be convinced in the future that his method is a method to follow. If all our cases could be carried beyond the three-year limit by that method I think we would all follow it. But for myself, I feel there is no choice in methods in operations for cancer of the uterus. The only method is the vaginal one, total extirpation. I cannot imagine a case of cancer of the uterus where I would be ready to open the abdomen and remove the uterus. I think when the disease is so extensive and the uterus is so large it is beyond the limit of operation, it is simply an experiment, the case is bound to recur, and they are cases we should not touch. Dr. Baker's paper was exceedingly interesting to us all quite a number of years ago. I never could follow it, because in cancer of the cervix I never could tell whether it is cancer of the cervix or whether the disease has not extended farther into the body. The mucous membrane may not be diseased at all, but under the mucous membrane it is found that the disease extends far into the body, even farther than Dr. Byrne, as I understand, reaches with his operation. As I have said, I believe there is only one method of operating, and that is total extirpation by the vagina, but the cases should be very carefully selected.

Dr. HANKS: There is one interesting fact for all of us to consider when we confess that we have not adopted Dr. Byrne's method. I thought I would adopt it a few years ago, and I went over to see his battery and instruments and found a perfect working apparatus but one which I could not procure in New York at that time. I was interested in hearing Dr. Byrne speak of the probability of the current of electricity having some effect on the adjacent tissue. If we do our work with the thermo-cautery we have a clumsy apparatus, and I truly believe we have 20 per cent. more recurrences than Dr. Byrne has. There must be therefore a difference between the thermo-cautery and the galvano-cautery in the radiation of heat or in the galvanic current.

Dr. Byrne: The difference between the galvanic cautery and the thermo-cautery is this, that the galvanic cautery has a delicate electrode, a small knife which you can manipulate in close quarters, and is an instrument suitable for vaginal work. The other instrument is clumsy and unsuitable. Dr. Hanks can procure a battery like mine from Tiemann & Co.

Dr. Janvrin (in closing) said: I stated very clearly in my paper that the cases on which I had been accustomed to perform vaginal hysterectomy were selected cases. I tried in the paper to define those cases. It is in those cases that I have been able to obtain my percentage of cures. The question has come to my mind frequently, and more especially while Dr. Byrne has been giving us the details of his operation, whether some of the cases which I excluded are not the ones to which his operation might possibly be applicable. Dr. Cleveland has stated that in cases where there is any extensive disease, presumably in the peritoneum, in the covering of the uterus itself, in the broad ligaments, or in the glands higher up in the pelvic cavity, he would not recommend any operation. I fully agree with him on that point. I said in my paper that if any operation was justifiable in any such conditions it would be the combined operation. At the present time I am not prepared to say that any radical operation is justifiable. The cases in which this extensive operation has been performed have been done in the last two years almost entirely. We have no statistics yet as to the results, and therefore can base no opinion on the operation. In a few cases that I have heard of there has been a rapid return of the disease. In a few others there is no return as yet, but it is too early to state the ultimate results.

Official Transactions.

A. M. Jacobus, *Recording Secretary.*

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, February 9, 1897.

The President, BACHE MCE. EMMET, M.D., in the Chair.

A Case of Inversio Uteri Post-partum, with Remarks upon the Aetiology of Puerperal Inversion of the Uterus.

BY GEORGE TUCKER HARRISON, M.D.

(See page 541.)

DISCUSSION.

THE PRESIDENT: Dr. Harrison's contribution is, I think, full of interesting suggestions and many interesting points are alluded to and possibly discussed by some of those who have had experience in obstetrics, and will be productive of a great deal of good. It is now open for discussion, gentlemen.

Dr. LE ROY BROUN: Mr. President, I have no theory on the origin of it. I would like to ask Dr. Harrison to tell us the method he has carried out in reducing inversion.

Dr. E. L'H. MCGINNIS: I have nothing to say. It is such a rare condition, I do not think much *can* be said. The Doctor took the only course open to him, and I think he got through it very luckily.

Dr. GEORGE H. MALLETT: It is a rare condition, and I have had no experience, but I was wondering when the Doctor read his statistics whether they were equally rare in this country, and in England and in France, as in Russia and Ireland. It would seem to me that we would have more complications, the higher the nervous development, and I thought Americans were probably more developed in their nervous system than any other race.

Dr. HARRISON: I do not think it is a question of country, it is simply the reports of large institutions, in which the birth is watched from beginning to end. The conditions favoring inversion are not so apt to occur in a large institution where the labor is watched from the beginning to the end. The state of the uterus must be taken into account. Inversions cannot originate by pulling on the cord unless there is that remarkable condition that prevails in these cases in which there is complete relaxation. Rokitansky calls atten-

tion to a condition which he describes as paralysis of the placenta *in situ*. As a matter of fact, and this is one instance to prove what a gigantic mind he had, John Hunter had preceded him, and had introduced this as a ætiological factor in inversion. He studied it more in connection with inversion caused by tumors, and his idea was that there was a paralysis at the attachment of the tumor, then there was formed a little depression, and the action of the uterus produced a sort of intussusception, as he described it.

Dr. A. B. Townsend: Dr. Harrison has read a most interesting paper on inversion of the uterus. The cases are so rare that we have seen very little. I have seen only cases that have existed for a long time. They have occurred without there being any disease of the uterus. I never considered so much the local atony as the complete atony, and then an absolute cessation of uterine contraction. I question very much how that zone of localized atony can be determined as being the cause. It could be determined if there was a thinness there, or if we could see that it was less rapid, or took on that form less rapidly than the other uterine tissue.

Dr. Broun: Did you have any bleeding, any post-partum hemorrhage?

Dr. Harrison: Very little, because the placenta was pretty firmly attached to the fundus. The question has been raised by various obstetricians as to the best method of procedure in those cases, whether you detach the placenta or replace the whole mass. The objection is raised that while you may have a larger mass to carry up through the os if the placenta is left *in situ*, if you peel it off the woman is now in a condition of shock, and you increase the danger of shock and the danger of hemorrhage, but notwithstanding I thought the right thing to do was to get rid of the placenta and replace the uterus.

The President: There is much less volume to deal with, and especially nowadays, when the uterus could be packed.

Dr. Broun: You had no hemorrhage when you peeled it off?

Dr. Harrison: Not a bit.

Dr. Broun: Before you replaced it?

Dr. Harrison: Not very much.

The President: There was no rupture of the lower segment of the external os?

Dr. Harrison: No.

The President: The question Dr. Harrison has brought up is as to whether it was a frequent cause. I think it is not a frequent cause, and have been very careful not to make traction on the cord; simply to extract it but not to tear it.

Dr. HARRISON: The necessary condition to the development of an inversion by pulling on the cord, so that there should be total inversion of the uterus, has been established by experiment..

Dr. BRYANT: As a matter of observation, I have seen manipulations which were not at all careful to avoid pulling on the cord, yet I never have seen anything take place in the way of inversion.

Dr. HARRISON: Before you can produce an inversion I think you will tear the cord off.

Dr. BRYANT: It is slippery, it is hard to pull. Was this a quick labor, Doctor?

Dr. HARRISON: The inversion did not occur until half an hour or three-quarters after the birth of the child. I want to say in this connection that it has been asserted that the imperfect application of the Credé method is responsible for the production of inversion. The late Professor Kaltenbach, who died recently, I know states that on one occasion he saw inversion produced under his eyes in a case in which a colleague made use of the Credé method in a faulty manner. This physician persisted in efforts to express the placenta during the contraction, and then followed it when there was a relaxation, and during that relaxation, when there was an absence of contraction, as Kaltenbach said, "I saw the inversion originate under my eyes."

THE PRESIDENT: Just one point more. Is it true that there happened to be no hemorrhage during these three-quarters of an hour when there was complete atony of the uterus, and the placenta was probably in part separated already?

Dr. HARRISON: I said that the placenta was pretty firmly attached to the fundus. I had then to pull it off. If there had been a partial attachment of the placenta there would be a collection of blood behind.

Dr. J. N. WEST: There is another interesting point in regard to that. I have heard it stated by good authority that the adherent placenta was due to contraction of the uterus, that that was why it was adherent. Dr. Harrison has been able to see this placenta adherent to the uterus.

Dr. HARRISON: In connection with this subject, there has never been an instance in medicine where faulty observation played such a part as in the description of the origin of inversion, as well as in the delivery of the placenta, especially in English books. All this talk about the hour-glass contraction depends on important observation. Such a thing as an hour-glass contraction, according to the description of many English books, has never existed anywhere except in the brains of the writers. There has never been such a thing as an

hour-glass contraction in the sense that they maintain. The only thing that corresponds to an hour-glass contraction is the contraction at the ring of contraction.

Dr. E. E. Tull: I would like to ask Dr. West if he meant that the contraction of the uterus retained it *in situ*.

Dr. West: I have heard it stated that the retained placenta was due to the contraction of the uterus, contractions in certain localities.

Dr. E. E. Tull: At the placental site or elsewhere in the uterine cavity?

Dr. West: Placental site.

Dr. E. E. Tull: The placenta being a non-contracting body, the contraction of the uterus would necessitate tearing off the placenta, inasmuch as the placental site occupies 225 cubic inches with uterus distended and only 25 cubic inches when contracted, and that was one of the reasons given why the placenta was separated from the uterine body. I cannot understand why it is possible for the uterus to contract and retain the placenta in site. It is a new theory, and I know it is different from the ordinary one put down in the books.

Dr. W. L. Dunning: I would like to relate an interesting case that I had, that has nothing to do with the inversion of the uterus, but the difficulty in expressing the placenta. There was no difficulty in the delivery of the child, which was premature, about eight months. As was my custom, I waited about twenty minutes for the placenta to come away, and I endeavored to express it by the Credé method. Failing in that, I put my finger in to see if the os was prettty widely open, and found the internal os was closely contracted around the cord, and failing to dilate it with my fingers, and after trying to express it according to Credé's method, I finally was compelled to administer chloroform. Slight hemorrhage followed, nothing alarming, and she got along all right.

Dr. H. T. Hanks: I have had some experience in these cases of inversion of the uterus, and I remember one distinctly where a midwife had attended the patient. The patient was given a dose of castor oil just after delivery, and she immediately went into collapse. Four hours after the baby was born. I was called. I found the uterus completely inverted, and outside the vagina. It was quickly returned, and reduced in the usual manner for primary inversion. I have no knowledge of the cause of the accident, except that she had taken the large dose of castor oil immediately after the birth of the child.

I have had in consultation no less than four cases of inversion of

the uterus, soon after delivery, where I have worked successfully in replacing the organ.

Possibly the cause may be from an intra-uterine tumor, or from some local paralysis resulting first in a slight dimple in the uterus, and this increases gradually, in the patient's weakened state until the whole uterus is outside the body, completely inverted.

Fibroma Attached to Tube, Ovary and Round Ligament.

Dr. JOHN ASPELL: I present this specimen with the report of a case of a young woman of twenty-two, who complained of more pain with her menstruations than at any other time. She always had dysmenorrhœ from the time she menstruated, which was at the age of seventeen. The periods were of the twenty-eight-day type, lasting four days, and she came to the hospital to find out about the pain. On making an examination, I made out a tumor at the site of an ovary about the size of a fist. It was rather harder than an ordinary cyst, and gave the impression of a fibroid. I could not express an opinion, but on operating, I found the tumor embedded in the folds of the broad ligament, and attached to it was the insertion of the round ligament, Fallopian tube and the ovary. The interesting feature of the tumor itself is the attachment of the tube and ovary and the round ligament. It is a fibroid tumor. Evidently it has been thrown off from the uterus itself, inasmuch as it was disconnected with the uterus. It was in the broad ligament itself. It was on the left side.

DISCUSSION.

THE PRESIDENT: You believe it was attached?

Dr. ASPELL: Yes.

THE PRESIDENT: It is a uterine fibroid.

Dr. ASPELL: It might have been a uterine fibroid, but on account of its being attached I thought it was not.

THE PRESIDENT: My idea was that on account of the situation it must have been thrown off from the uterus.

Dr. HANKS: This case of Dr. Aspell's illustrates the fact of which I have spoken before, viz.: that the present gross appearance of the fibroid tumor is not an infallible evidence of how it looked and felt one year before. We must expect the sub-peritoneal and the intra-uterine tumor to change in the size of the pedicle, or its attachment, with the continued rythmic contractions of the menstrual period, and especially with the more violent contractions occasioned if the patient has taken ergot, or has been treated with electricity. The tumor with a long pedicle is liable to become twisted on its

pedicle by sudden motions, etc. And later, after this attachment has become strangulated, it may, and frequently does become entirely separated from the uterus, and attaches itself to other adjacent organs, as in this case of Dr. Aspell's.

Dr. West: Mr. President, I saw a case where the fibroid, about the size of a goose egg, was removed from the left broad ligament. It was well down in the pelvis, and was peeled out, enucleated, and the edges of the sac were brought up and sewed to the abdominal peritoneum. It had no connection with the broad ligament. It seemed to be surrounded by cellular tissue, and probably originated in the same way that this did, started as a fibroid of the uterus. The patient recovered.

Dr. Brown: I remember two cases. In both cases the solid tumor was in the folds of the broad ligament, and in both they were not attached in any way to the uterus. In the first case, it was close to the uterus, but not attached to it. In both cases it came from the uterus, became pedunclated, and finally cut off.

The President: I did not put the question to Dr. Aspell because I doubt the possibility of his tumor having its attachment upon the Fallopian tube, nor in fact, springing from that point, for I recall a case of mine in 1895. It was interesting because it was a case in which I cut the ureter and took out a large fibroid. I took it from the fifth lumbar vertebra. It was attached firmly, as if it had its growth there. The pathologist holds that it was a fibromyoma. That case recovered. Last winter I had a chance to cut the same ureter again, and I also took seven masses out of the abdomen, and most of them were attached to the omentum. These were non-malignant myoma also. They looked like congealed fat. I do not mention it more at length, because I shall make, perhaps, a full description of it. Therefore I believe that such growths may spring from most every structure within the abdominal cavity and pelvis.

Dr. McGinnis: I would like to ask if it is the experience of the members of the Society to often see cases of *sub-mucous* fibroid detach themselves. I had an experience that was rare to me some four or five years ago. The patient was a Jewess who came to the clinic, and she had I could not say how many fibroids. I never saw so many in one case in my life. They seemed to be almost numberless, but very small. She had symptoms of hemorrhage, pain, etc. I introduced the intra-uterine electrode without the slightest difficulty, and she got up from the table and went home felling perfectly comfortable. Two days afterward the husband came up to my office and wanted me to go down to Mott street and see his wife. I went,

and found that she was in a profoundly septic condition, with a temperature of 104.5°. The surroundings were as bad as could possibly be imagined from a hygenic point of view. I afterward learned she had had septicemia four or five weeks before she came to me. She was the wife of a butcher, and while in the shop she had slipped and caught her hand on a hook upon which carcasses had hung, and that had set up septicemia. She had to have proper attention at once, and I sent her to the Woman's Hospital. My impression was that she was in Dr. Cleveland's service. She was in a most terrible condition. In the course of the next week or ten days she passed thirty-three or thirty-four fibroids, four tumblers full, varying in size from that of a pea to that of a pigeon's egg, and these certainly were not in the cavity because there was not the slightest difficulty in introducing the electrode. However, the woman got well. I was very much surprised to see how many fibroids *could* get in the uterine cavity.

THE PRESIDENT: They were examined?

Dr. MCGINNIS: They were examined, I think, but I am not positive of it.

Dr. HANKS: I remember two cases. One is the case of a woman whom I watched constantly for at least six years. She had a sub-peritoneal fibroid the size of two fists, and when I first saw her there was no question about its being a sub-peritoneal one. Every objective symptom pointed to a braoad attachment to the uterus. It could not be moved except as I moved the uterus. She took ergot regularly. Finally she came into my sanitorium, and I expected to find a large fibroid tumor with attachment to uterus so extensive that I should find it necessary to remove the uterus, but instead I found the tumor the size of a full-grown child's head, attached to the uterus by a pedicle one-half inch in diameter. Dr. Tull assisted me in this case, and Dr. Krug was present. Another case was a patient formerly in the Presbyterian Hospital. The surgeon thought she was suffering from intra-uterine growths, resulting in menorrhagia, and curetted thoroughly. Finally not improving, she entered the Woman's Hospital, and I did an hysterectomy, and found in the uterus a perfectly loose fibroid, the size of my fist. Whether it was loosened with the curette, or by the contractions which were induced by the curette, I cannot say. She had no septicemia before, and made a perfect recovery .

A Complicated Appendicial Abscess.

Dr. G. H. MALLETT presented an appendix which he had removed two weeks previously. Two years ago he had removed by

laparotomy both appendages for double pyosalpinx. She recovered promptly, and remained in good health until about six weeks ago, when she began to suffer pain in the left iliac region. Upon examination I found a large fluctuating tumor in the left side of the pelvis. A diagnosis of intra-ligamentous cyst was made. The following day this was opened from below and a pint of thin chocolate-colored fluid was evacuated and the cyst cavity packed with gauze. The patient had no temperature before the operation nor for six days after it. After the second day the gauze was removed, several inches each day. The convalescence seemed perfect until the sixth day, when she was suddenly seized with nausea and vomiting, and complained of intense pain in the left side. This was followed by symptoms of profound shock, the pulse was almost imperceptible, the skin was pale and covered with perspiration. Strychnine, alcoholic stimulant, external heat, etc., were administered during the night. Reaction set in, and the pulse and temperature went up, and symptoms of general peritonitis appeared. Three days later she complained of pain in the right iliac region, and three days after this a swelling was noted in the region of the appendix. He then operated and found the appendix almost surrounded by pus. With difficulty this was removed and the wound drained. The recovery was delayed by the occurrence of a fecal fistula, but this has since closed.

The interesting point in this case is the fact that the patient complained of no pain on the right side until three days after the symptoms of peritonitis began, and at that time an abscess had formed.

Discussion.

The President: This case of Dr. Mallett's is before the society for discussion. Symptoms of appendicitis developing after an operation for removal of tumor of the opposite side, formation of abscesses, large amount of pus and gangrenous appendix.

Dr. Mallett: She had absolutely no temperature until this condition occurred.

Dr. Dudley: Was there any connection between the appendicitis and the other trouble?

Dr. Mallett: The trouble was on the other side. I examined the right side. If I had the case again I would pay more attention to the examination. If I had suspected it I would have done so.

The President: You did not state whether you found at the time of the removal of the appendix that there was any connection between it and the tube on the same side.

Dr. MALLETT: Two years ago I removed both ovaries and tubes. There was an intra-ligamentous cyst on that side. When I made an incision in the region of the appendix adhesion had occurred, but the general peritoneal cavity was not invaded at the time.

Dr. WEST. I think Dr. Mallett deserves a great deal of credit for discovering and operating on this appendix in this complicated case, where he had operated on one side. It seems to me it was a very complicated case. He was fortunate to discover it.

Dr. HARRISON: From one point of view he was enabled to arrive at his diagnosis by exclusion, he had taken out so much. I think this is a very interesting case, because it brings to my mind a case that I was very much interested in. A lady was sent to me who had been under the care of a physician out of town. The doctor had made a diagnosis of appendicitis. I could not demonstrate any tumor there, or any enlargement of the appendix. I could not make a positive diagnosis of inflammation of that region, but there were palpable evidences that the woman suffered from purulent endometritis and salpingitis. I told her that I proposed to operate on her. I intended to dilate and curette, and then I should go into Douglas' cul-de-sac, which is the method that Pryor adopts. By opening up the cul-de-sac thoroughly and putting the patient in the Trendelenberg position you can see everything you need to overlook, the appendages, the ovaries, and the veriform appendix; then you can make your diagnosis and act accordingly. The woman declined to go into the sanitarium to be operated on, and she returned to her old love, her family physician, and I think she must have had a recurrence. He operated and found the appendix in a very bad state. I do not know anything about this case. I do not know the physician, but I know one thing, that it is like the boy forcing his sums in arithmetic, operators nowadays can find a diseased appendix when they wish. I believe the term appendicitis is too narrow. The old name perityphlitis is a better one. At any rate, the removal of the appendix in the case to which I refer could in any event only partially relieve the symptoms but by no possibility cure the morbid condition in its entirety.

Dr. MUNDÉ: Dr. Harrison has exactly struck the point. I saw a case in Harlem last fall with Dr. Brockway, an old lady of fifty-six, who he thought had pelvic peritonitis. At her age, peritonitis was not a very probable thing. I told the doctor that I thought the old lady had perityphlitis. He wanted to know why I did not call it appendicitis. I said: "Because I do not find the pain in the region of the appendix, but several inches higher, above the crest of

the ilium." She was in a very bad condition on account of the pulse and temperature and the general collapse, so it was decided to take her to the hospital. That was about five o'clock in the evening, and the same evening I operated on her and found, on dissecting my way down, that I opened a large abscess, which was situated near the cæcum. I found the appendix was adherent but perfectly healthy. Of course I removed it as a precaution for the future. The patient recovered. I have had some experience with appendicitis and salpingitis on the right side, and I think that a man who can always make a differential diagnosis between salpingitis on the right side and appendicitis is more lucky than he knows, and more wise, too. He hits it better than he knows. The subject is one of intense interest to me, because most of you may know that I have seen considerable of appendicitis in the female, particularly relating to pregnancy, during the last two years, and have recorded my experiences in print.

The President: The point is not in relation to the salpinx, but it was in relation to pelvic diseases.

Dr. Aspell: I did an autopsy on a woman the other day, and found an appendix seven inches long.

Dr. Mundé: I reported a case at the last meeting where I removed an appendix seven and a half inches long through the vagina.

Curettage and Packing the Uterus.

By J. D. Emmet, M.D.

(See page 561.)

Discussion.

Dr. Dudley: I do not know that I can add anything to the discussion, except to point out one fact, and it is this, that long ago Peasley wrote one of the best articles I have ever read upon the cause of pelvic disease. He took this ground that chronic pelvic congestion was a prime factor in pelvic disease, bringing about the various pathological changes that we now see, except those from septic infection, and injury done in childbirth, and I think he was right. I do not know that we have improved upon his ideas much in the last twenty years. Take, for instance, the habitual constipation of women, different forms of displacement, tight lacing, etc., all of which conditions will set up this congestion, and ultimately produce the changes that Dr. Duncan Emmet has spoken of tonight. I do not agree with him entirely in all his ideas about the

condition of the endometrium, but there is not time for a lengthy discussion upon the subject to-night. I think the points he has raised are excellent, but I never close a cervix without previously curetting. To do so without it would be to close in a great deal of the trouble. There are many questions brought up in the paper that I should like to discuss, but time will not permit. I therefore only call your attention to what I consider the starting point of many of them.

Dr. HARRISON: I have listened to Dr. Duncan Emmet's paper with a great deal of interest. He has touched upon a great many interesting subjects which might be expanded into a lengthy theme. It is certainly a very important subject in all its bearings, not only in regard to pathology but in regard to treatment. So far as I am concerned, I have been for many years an advocate of the curette. In 1884 I was requested to read a paper before the State Medical Association, and I used as my thesis, "The Curette, Its Place and Its Power." I think the curette has a tremendous power. I am also a most firm believer in endometritis, and I think one great work Dr. Polk did was to show what good could be accomplished by invading the uterus and using the curette and packing in forms of acute inflammation. When he read his paper on that subject it was a great innovation. In some certain forms of endometritis, by the use of the curette, I have cured cases that I am sure in no other way could I have been successful in restoring the patient to a normal condition, especially in that form of endometritis called hyperplastic endometritis or endometritis fungosa. So often women come to you in mid-life, and they listen to friends who tell them, "Oh, you need not mind that bleeding. It is the change of life." Change of life is the *bête noir*, like cutting teeth in the case of babies, and a great many women become chronic invalids from having these monthly hemorrhages who might be relieved by a timely resort to curettage. In those cases I have gained brilliant results, and so with various other forms of endometritis as in interstitial endometritis and glandular endometritis. That form of endometritis in which I think the curette has been abused is in operations on the uterine mucosa in catarrh of young girls. I thing in those cases general measures would be better than local treatment.

THE PRESIDENT: I think I should be doing justice to the paper if I asked for remarks bearing more specifically on the points developed by the writer. The question is: Is there an essential endometritis that is apart from endometritis created by disease of adjoining organs ?

Dr. J. DUNCAN EMMET: I said the condition was rare and,

consequently, of secondary importance, taking the general run of cases.

Dr. MUNDÉ: The time is too short to say much about the paper. It is a very interesting paper, an exceedingly full one but an exceedingly one-sided one. That is to say, it takes the ground, as I understood it, that the curette is applicable only to a certain limited number of cases, namely those rare cases of uncomplicated endometritis, the existence of which Dr. Duncan Emmet admits. Now I do not agree with him at all. The curette is an old story. I do not wish to make any claim to priority. Nineteen years ago I sent a paper to the Edinburgh Obstetrical Society on the use of the dull curette. In it I spoke of the very indications for the curette, which Dr. Duncan Emmet now, nineteen years later, refuses to admit; that is to say, the presence of an endometritis which was not dependent upon any chronic inflammation of any other organ. Since then, if I may be allowed to say, the statements in my paper, which was published in the *Edinburgh Medical Journal* of January, 1878, have not been controverted to any extent, except by some gentlemen who deny the existence of uncomplicated endometritis. Dr. Duncan Emmet admits that endometritis occurs, but as a rare condition, and I do not agree with him on that point. Why should endometritis not exist, the same as a catarrh of the nose or throat exists, or as a catarrh of any other mucous membrane may exist? I am told that the endometrium is not a mucous membrane, the lining membrane of the vagina has no glands, but the uterine mucous membrane has glands and epithelium; why then, is it not a mucous membrane? Why should it not be subject to catarrhal inflammation, and why not be treated on the same basis as the catarrh of other mucous membrane? I cannot agree with Dr. Duncan Emmet on that point, neither can I agree with him on my clinical experience. Then I think Dr. Duncan Emmet has given undue prominence to Dr. Polk's position. Dr. Polk is by no means the man who invented curetting of the uterus.

Dr. J. D. EMMET: I said popularized it; re-introduced it.

Dr. MUNDÉ: Quite right, Dr. Polk simply repopularized it, as Sims repopularized the duckbill speculum.. I think the indiscriminate curetting of every uterine cavity has been greatly overdone. Dr. von Wernbecker Sternfeld, of Munich, in 1874, advocated the use of the sharp curette for the cure of the endometritis accompanying pelvic peritonitis. It was practically the same thing as the curetting and gauze drainage of the endometrium, which has recently been advised by Dr. Polk and a number of other gentlemen for endometritis and salpingitis.

I believe myself that there is such a thing as an ordinary catarrhal endometritis, and I would like to see the gentlemen who say it does not exist explain the cases where they find a muco-purulent discharge from the external os of the thin creamy variety, with red, eroded cervical lips, as I have seen it in young girls. I would like to know how they explain those symptoms except by the existence of endometritis, and why this mucous membrane should not be subject to a catarrhal inflammation the same as other mucous membranes of the body, with the subsequent concurrent symptoms, I do not see. And I have found the use of the curette in the uterus, the dull curette above the internal os, the sharp curette between the external os and the internal os, of incalculable value in my practice. I do not charge $500 for it. I do not consider it a capital operation, but it can be made so if the operator is careless of his antiseptic methods or is not careful about keeping the patient in bed sufficiently long. I think curetting is an operation that requires care in its performance, thorough antiseptic measures and thorough care of the patient. I should not let a patient out of bed for a week after curetting. I confess that I have had experience which has led me to arrive at the conclusion, that the patient after curetting should not be allowed to get out of bed for a week, and her temperature should be taken carefully. I have seen severe peritonitis following from curetting alone. As far as Dr. Welch's statements are concerned, I have learned to discriminate between the microscope and my clinical observations, and in doubtful cases am inclined to prefer to trust to the latter.

Dr. J. D. Emmet (in closing): In regard to the remarks of Dr. Harrison, Dr. Mundé and Dr. Dudley, they agree in regard to one point in their discussion. As far as the other points are concerned, Dr. Mundé voices it a little more plainly than others: "I do not agree with Dr. Duncan Emmet." But the one thing that they all agree in is in the fact that they do believe in the frequency of endometritis and they believe that endometritis should be curetted, and two of the gentlemen at least state, Dr. Dudley especially, that they always curette the uterus before every operation upon the cervix. Now it is interesting in that connection to know that Dr. Emmet, who discovered the indications and invented the operation for laceration of the cervix and undoubtedly has done twice as many operations for laceration of the cervix as any man living, has never curetted a uterus before operation. I was first prejudiced against endometritis as a common factor in disease from his teachings. At the same time, I was learning from Dr. Thomas, Dr. Bozeman and the other doctors at the Woman's Hospital. My own experience has

been exactly what Dr. Emmet has maintained and is the experience of most of us: that so-called endometritis gets absolutely well without touching the uterus, if the indications for treatment of peri-uterine and para-uterine inflammations, themselves or their products, and of injury to the cervix and vaginal outlet be recognized and followed. Not one of the gentlemen who have spoken on the subject has attempted to deny or to explain that fact. Dr. Mundé referred to the pathology of endometritis. He intimated that some men held that the uterus was not lined with mucous membrane. In the paper which I have just read I acknowledge that fact, and in one of the extracts from Dr. Welch's letter, which I did not read, Dr. Welch distinctly states that the lining membrane of the body of the uterus is a true mucous membrane. It has a superficial epithelial layer, and there is a glandular layer. All these physical conditions make up a true mucous membrane. I am willing to accept Dr. Welch's statement as final. I have not pretended, as Dr. Bache Emmet intimated, that Dr. Welch upheld me positively in my ideas on endometritis. I quote Dr. Welch to show that there is nothing in his discoveries in pathology to contra-indicate the position I take, and it is just as well that I have these weapons, because those who believe in endometritis as the origin and end of all things clinically quote shamelessly for their own side all sorts of authorities. We are rather conservative, as Dr. Mundé remarked to me privately a few moments ago. This fact does not debar us, I hope, from seeking authorities in support of what we believe to be true. I am very glad to have Dr. Welch's authority that my views are not opposed to facts made known by scientific investigation.

Official Transactions.

G. W. Mallett, *Secretary.*

ITEMS OF INTEREST.

The Semi-Centennial Meeting of the American Medical Association

The semi-centennial meeting of the American Medical Association, which will be held in Philadelphia on the 1st, 2d, 3d, and 4th of June, 1897, bids fair to surpass in the character of the entertainment, the scientific papers and the number in attendance any meeting which has heretofore been held. The Committee in Charge have been able to obtain large and roomy places of meeting for the general meetings and the section meetings, all within a single block,

and within very short walking distance or immediately adjacent to the largest and most comfortable of the Philadelphia hotels.

For the week preceding and following the meeting the Committee of Arrangements have also arranged for clinical courses which will be open without charge to all physicians who may visit the city at that time. These courses cover every branch in medicine and its specialties, and will afford visitors the opportunity of seeing the active clinical work of all the great teachers of Philadelphia.

The American Gynæcological Society.

At the Twenty-second annual meeting of this Society, which was held in Washington, in conjunction with the Congress of American Physicians and Surgeons, on May 4, 5, and 6, the following officers were elected for the current year: *President*, Dr. Paul F. Mundé; *Vice-Presidents*, Drs. E. C. Dudley, A. W. Johnstone; *Secretary*, J. Riddle Goffe; *Treasurer*, J. M. Baldy; *Council*, A. F. King, Edward Reynolds, J. H. Etheridge, H. J. Garrigues.

THE

AMERICAN GYNÆCOLOGICAL

AND

OBSTETRICAL JOURNAL.

JUNE, 1897

A CASE OF RETENTION OF URINE SIMULATING PREGNANCY AT TERM.*

By G. M. Boyd, M.D.

Physician to the Philadelphia Lying-in Charity.

Prolonged retention of urine in the female is sufficiently rare to make the report of a case of some interest. In a rapid review of the literature upon this subject, only one case could be found with a similar history.

Mrs. R., a multipara, aged forty-three years, was brought to the hospital in an ambulance March 15, 1897. She had been under the care of a midwife, who supposed her patient was in labor at term. She stated that the midwife had ruptured the membranes. The labor not progressing satisfactorily, the midwife sent her to the hospital glad to be relieved of the responsibility of so perplexing a case.

The patient, on admission, was immediately given the usual preparatory treatment, and was taken to the delivery room for examination. From her size she appeared to be pregnant at term. The abdomen was so distended that any attempt at palpation was impossible, both of her legs were swollen, painful and ædematous. On examining the patient internally, nothing could be felt except a fulness due apparently to a cystic tumor which displaced the cervix. A small amount of urine was voided in this examination, due, probably, to pressure on the urethra. The patient's general condition showed evidence of acute uræmia, she had a strong, full pulse, some headache and disturbed vision, difficulty in breathing, and pain about the heart. Dr. Stratton, the resident physician, deciding that this tumor was not the uterus, passed a catheter, and to her surprise

* Read before the Philadelphia Obstetrical Society, April 1, 1897.

(after removing four quarts, the catheter was still running as freely as at the beginning. It was now deemed wise to stop. This amount withdrawn relieved considerably the distended abdominal wall, but on pressure a large cystic tumor was still felt, and from its size, fully as much fluid still remained. Appreciating now that we had to deal with an enormously distended bladder, it was considered wise to wait until it could accommodate itself to the relieved tension, before again reducing the amount of its contents. In eight hours the patient, feeling some desire to urinate, but being unable to do so, the catheter was again passed and three quarts removed, in another eight hours three and a half quarts were drawn off by catheter, the bladder still not emptied. The tumor with each catheterization was reduced considerably in size, and the ædema of the extremities, vulva and hypogastric region was rapidly disappearing. At the end of twenty-four hours, the bladder was completely emptied for the first time, the total amount removed during this period was three gallons and three quarts, viz.: 500 ounces. In the second twenty-four hours, she voided by catheter five quarts, viz.: 170 ounces. In the third twenty-four hours by catheter, three quarts or 101 ounces. On the fourth day she gained control of the bladder and voided without assistance, in the twenty-four hours, sixty-three ounces. Since then there has been no marked evidence of polyurea the amount voided each day averaging forty-five ounces.

An inquiry into the origin of this great retention gave the following facts: About a month prior to her admission she had had some pain in the small of the back, extending around to the region of the bladder. So great was it that she could not stand erect, and the same day she was unable to empty her bladder. The pain and swelling increased gradually, until at last the urine constantly passed in small amounts from over-distension.

She stated that there was a lump over the pubic symphysis which gradually increased in size.

The only cause that could be obtained for the retention was that, being very poor, she went about the streets begging for food. When she wanted to empty the bladder no opportunity offered itself, and then, on reaching home, the desire was gone.

Having missed her period for two months and growing large so rapidly, she believed herself pregnant at term and called in a midwife.

After the bladder had been completely emptied, an internal examination revealed a uterus enlarged about the size of a three months' pregnancy. It is probable that the amount of walking she

was compelled to do retroverted that organ. It then pressed on the neck of the bladder causing an obstruction to the escape of urine.

An analysis of the fluid made by Mr. F. A. Sherrer proved it to be the normal urinary secretion of a low specific gravity. It is as follows: Color, pale straw; odor, characteristic; reaction to litmus, alkaline; specific gravity, 100.5; albumen, absent; sugar, absent; sulphates and chlorides, in excess; phosphates, decreased; urea, decreased; indicum, trace; urobilin, trace; total solids, 1.165 per cent.

A case quite similar to the one just described was admitted to the obstetric wards of Guy's Hospital.

Dr. Braxton Hicks (London Lancet, 1880, Vol. I., p. 562).

Enormous Distension of Bladder; Retroversion of Uterus; Pregnancy Three Months and a Half; Œdema of Intra and Lower Extremities Ceasing on Catheterization; Restoration of Position of Uterus; Recovery.

The history is as follows:

A. S., aged twenty, had a child in April, 1878. In April, 1879, she ceased to menstruate. In the following October, about a month before admission, she fell down upon her face and abdomen. About a week after the abdomen commenced to increase in size. She had some medicine and got better, but about a fortnight before admission the abdomen again began to swell, and remained enlarged until relieved at hospital. She had suffered from the increasing tension, but within a few days the urine had been scantily passed. On admission the abdomen was distended as large as the eighth month of pregnancy, but more tense, the skin shining. The vulva and legs were ædematous.

On examining the vagina a firm swelling was found in the posterior part of pelvis, the os uteri being close to the symphysis pubis. A catheter was passed and 146 ounces of urine were drawn off, thereby removing the swelling above the pubes and revealing a pregnant uterus. In ten hours, however, the bladder had enlarged again and 120 ounces of urine were drawn off. Four hours after seventy ounces, in three hours fifty ounces, and at the end of twenty-four hours forty ounces, making altogether in the twenty-four hours two gallons two quarts, or 336 ounces.

The woman was kept in bed, and shortly after the œdema subsided. She was kept as prone as possible, and the uterus by the second day rose into the abdominal cavity and remained there.

Dr. Hicks remarks that cases of such distention of bladder were extremely rare. He says the history made the diagnosis easy, as-

sisted by the catheter, which should in all cases of tumor of the lower abdomen be passed as a matter of routine. He cities a number of cases where the employment of this rule would have saved mistakes, for in these cases complete retention seldom occurs, and when a small quantity is passing, it is not considered that any is retained. The passing of the catheter makes this matter clear.

It is an interesting fact in both of these cases that with such severe distention of the bladder no inflaming symptoms followed, neither was there any decomposition of the urine, which was also healthy in all other respects. It forms a strong contrast with those cases of retention following labor, where, after twenty-four to forty-eight hours, extreme pungency of the urine takes place with severe cystitis.

LACERATIONS OF THE CERVIX UTERI.*

By Geo. W. Jarman, M.D., New York.

The writer of this paper is well aware that in presenting for your consideration this evening a paper on the subject of lacerations of the cervix, little, if anything new can be added. Nevertheless, it has seemed that in confining ourselves, as we are so prone to do, to discussions of subjects of apparent greater magnitude, we may overlook some of the lesser ills which are of equal importance. Again, the subject should be of special interest to members of this society inasmuch as the accident occurs while the patient is in charge of the obstetrician, and oftentimes is left to the tender mercies of the gynæcologist.

I propose to limit my remarks entirely to lacerations of the cervix during labor, their location, causation, prevention and reparation. In order that the subject may be studied more intelligently, I must crave your patience for a few moments with the anatomy of the cervix. "The cervix is the lower rounded and constricted portion of the uterus. Around its circumference is attached the upper end of the vagina"—(Gray). The vaginal portion of the cervix may be elongated, in which case it lies in the axis of the vagina. Its mucous membrane is different from that of the uterus, being thrown in folds which assume a certain amount of regularity. Each wall of the cervical canal presents a longitudinal column, from which proceed a number of small oblique columns, which arrangement has received the name of *arbor vitæ*. The anterior portion of the cervix

* Read before the New York Obstetrical Society, March 2, 1897.

is distinctly thicker than the posterior. The muscular structure of the cervix uteri is similar to that of the body, the fibres being irregularly disposed, having, however, distinct circular and longitudinal action under contraction. It is also necessary for me to call your attention to the fact that the cervix is histologically made up of the coalescence of the ducts of Müller, and that here, as elsewhere. the line of coalescence is always marked by a predominance of fibrous tissue and paucity of blood vessels. This very hasty recapitulation of some of the anatomical features of the cervix uteri is all that is necessary for the further consideration of the subject. Lacerations of cervix are divided according to their location into unilateral, bilateral, stellate, posterior and anterior. The bilateral is without doubt the most frequent, and named next in order of frequency is the unilateral, stellate, posterior and anterior. The writer has never seen a laceration of the anterior or posterior lip of the cervix in spontaneous deliveries. Such uniform frequency of lateral tears cannot be a matter of mere chance, and yet if one attempts to discover the cause of this almost constant location, he will find almost no statements made on the subject by the various authors on obstetrics or gynæcology. Having occasion recently to present a paper on a somewhat allied subject, I was struck with the almost entire absence of any literature, nothing more being said than that such frequency of lateral tears was the case. Almost all authors refer to the frequency of unilateral tears occurring in the left side, and without exception state that the tear is made by the direct action of the occiput, the left occipito anterior position being so much more frequent than any other. It has seemed to the writer that this reason, in part at least, is not tenable, from the fact that if the laceration was due to the direct action of the occiput we would find the tear occurring in the right oblique diameter, when, in reality, the tear is nearly always found at a point somewhat posterior to the left lateral radius. The writer is convinced that the cause must be sought elsewhere and offers this explanation: First, that the tear in the great proportion of cases does not occur until the occiput has rotated forward, in occipito-anterior positions. Second, that the tear is produced when the anterior portion of the cervical ring is caught between the occiput and the pubes, and the posterior portion retracts over the brow, face and chin. It is readily admitted that when the cervix is of normal length and the bag of waters has remained intact until complete dilatation has taken place that the head, other conditions being equal, can pass through in any diameter, but in just such cases do we find that lacerations are less likely to occur. The principal ætiological factors of lacer-

ation of the cervix uteri being early rupture of the membranes and congenitally elongated cervices.

In further explanation of the greater frequency of unilateral lacerations on the left side, if the above statements are true in regard to the causation, then it would readily follow that L. O. A. positions being so much more frequent that the cervix is caught between the pubes and the occiput at a point to the left of the median line, and the distance from this fixed point being less on the left than on the right side, to the point of least resistance, the tear would more naturally occur on the left side. This point of least resistance is at the union of the anterior and posterior lips of the cervix. The anterior lip is thicker than the posterior, hence the tear will be at a point posterior to the right or left lateral radius of the cervical ring. Again, the anterior and posterior lips of the cervix are reinstated, so to speak, by the anterior and posterior columns, and made stronger by the excess of fibrous tissue.

Little if anything has been advised by the various authors on obstetrics in regard to any preventive measures which may be adopted, except that care must be taken to prevent the too early rupture of the membranes, and yet we know that when we find unusually long cervices early spontaneous rupture of the membranes is most likely to occur.

It has always seemed to the writer that it was strange that so much has been written on the various methods of supporting the perineum and causing the expulsion of the head and shoulders between pains and at the same time nothing so far as assisting the exit of the head through the cervix. The head is delivered over the perineum between pains since the perineal muscles are less tense at that time, and are susceptible of greater dilatation. The same can be demonstrated in regard to the cervix uteri. Every one is aware of the fact that if a digital examination be made of the cervical ring during the pain the ring is smaller and is also drawn upward, illustrating perfectly the action of the circular and longitudinal muscular fibres of the cervix. This being the case, it has been the writer's habit to introduce two fingers within the vulva after cervical dilatation has taken place and during the subsidence of the pain push the anterior portion of the cervix upward until the posterior portion of the head is entirely free from the grasp of the cervix. In nearly all cases nothing more need be done, for the posterior portion of the ring will retract over the anterior portion of the head, brow and face, voluntarily, thus liberating the head. The pushing up of the anterior portion of the cervix is more readily accomplished if the patient is slightly under chloroform anæsthesia. The bladder

of course should be empty. Doubtless some one might apply the term of "meddlesome midwifery" to this preventive measure, but it could with equal propriety be applied to measures for protecting the perineum. Again, that unless the obstetrician used great care sepsis could be readily introduced. This is undoubtedly true, but not more so than of any cervical examination, for the finger-tips only rest upon the cervical rim, to say nothing of the fact that every obstetrician should realize the importance of absolutely sterilizing his hands before making any vaginal examination. The fact remains, however, that with all the precautions which may be taken lacerations of the cervix uteri will occur, just as with the perineum. It is the writer's belief that all such lacerations should be repaired, provided the tear is more than of the first degree, and that no contra-indications on account of the condition of the patient are present. The closure of one avenue of infection, the prevention of one of the most frequent causes of sub-involution, with its long train of symptoms, the removing of the possibility of an after operation, and, in fact, the right that the patient possesses of being left in the most normal condition possible, all demand the repair of a cervix which has been lacerated. It has only been within the last few years that any special attention has been paid to the immediate repair of perineal lacerations, and it would seem probable that the day will come when immediate repair of the cervix will be as well recognized and as frequently performed a procedure as is now in regard to the perineum.

It is needless to suppose that a large number of assistants are required in the performance of this operation, for such is not the case. The repair of the cervix could be accomplished single-handed were it not for the necessary presence of some one to administer the anæsthetic. Very few instruments are necessary. Two double tenacula are used, one being placed on either lip of the cervix so that it may be drawn well down to the vulval outlet. This will not only show the depth of the tear but also hold the two lips in easy apposition for their union. Curved needles, silk-worm gut and a needleholder are all the instruments that are necessary. Recently I have had constructed a small appliance which may be described as a cervical pin which very much facilitates the union of the lacerated cervix. It is something of a modification of the old serrefine so far as its action is concerned. The mechanism of it being so simple that it practically explains itself. Slight pressure of the two sides between the thumb and forefinger separates the pins so that they may be adjusted over the tissues which are to be held together. In bilateral lacerations two or three on each side,

depending upon the depth of the tear, are all that are necessary. In case active hemorrhage is taking place from the rupture of some cervical blood vessel this little device should not be used, for it is only intended to hold the anterior and posterior lips in apposition. The suture of silk-worm gut should be depended upon to control hemorrhage.

In conclusion and somewhat to recapitulate, it would seem that lacerations of the cervix are lateral since this is the point of least resistance; that they are caused when the anterior lip is fixed between the occiput and the pubes; that releasing the anterior lip when the muscle is relaxed would act as a preventive measure; lastly, that more attention should be paid to the immediate reparation of the laceration.

THE STERILIZATION OF CATGUT AFTER HOFMEISTER'S METHOD.*

By Hiram N. Vineberg, M.D., New York.

The ideal suture and ligature material in abdominal operations must always be that which becomes absorbed. Non-absorbable ligatures and sutures may give rise to trouble months and years after the operation, as has been abundantly demonstrated by experience. Cat-gut possesses the quality of absorbability, but has the disadvantage of being difficult to sterilize. Various methods have been employed, each of which possesses some objectionable features. The method I have been heretofore following, that of subjecting the gut to a dry heat of 280° to 290° F. for a period of three hours, certainly destroys all germs and spores. But it requires great care, and frequently the cat-gut is rendered rather brittle. The chief difficulty in sterilizing cat-gut has consisted in the circumstance that it would not stand boiling in water. By the process recommended by Hofmeister, this difficulty is overcome. The cat-gut is first immersed in a solution of formalin varying from two per cent. to four per cent., according to the size of the gut. It must not be forgotten that the formalin in commerce is only a forty-per-cent. solution. Hence in making a two-per-cent. or four-per-cent. solution this dilution should be made accordingly. It is allowed to remain in this solution for a period varying from twelve to forty-eight hours. The very finest needs immersion for only twelve hours in a two-per-cent. solution, the fine twenty-four hours in two-per-cent. solution, the

* Read before the New York Obstetrical Society, March 2, 1897.

medium thirty-six hours in four-per-cent. solution, and the coarsest used for pedicles forty-eight hours in a four-per-cent. solution. It is then placed under a stream of running water (under a faucet) for twelve hours to completely wash out the formalin. It is next boiled in water for fifteen minutes, after which it is transferred to a vessel containing alcohol where it may be kept until required for use. It is well to add carbolic acid to the alcohol (from two per cent. to four per cent.). This renders the gut more firm, but it should be removed from the carbolic alcohol some time before using, and kept in plain alcohol, so as to remove the carbolic acid. The secret of success in this method of preparation is to keep the cat-gut in a high state of tension until after it has been boiled. Hofmeister recommends for this purpose that the gut be rolled tightly on glass plates. This is not sufficient. I tried various means without any success until I obtained a small apparatus devised by Dr. F. Lange, of this city.

It is a steel frame, six by eight inches, composed of two cross-bars and three uprights, the latter passing loosely through holes in the former. The centre upright has at its upper end a transverse bar which serves as a handle, and its upper third has a screw arrangement, as has also the centre hole in the upper cross-bar.

The cat-gut is wound tightly on the frame, and then, by giving the centre upright a couple of turns, the catgut is rendered very taut. There is no need of screwing the frame further apart until it is taken out of the formalin solution. Another couple of turns of the screw will be needed when the material is ready for the boiling process. Of course care must be exercised not to use too much force in screwing the frame, for if the cat-gut be rendered too taut it will break during boiling, and be unfit for use. I have thus far had only a limited experience with cat-gut prepared in this way, but the results have been good, and Dr. Lange tells me he has been using it for several months, and has found it exceedingly satisfactory. The steel frame may be obtained from M. Eisner, Third avenue and Ninth street, this city.

THE CHANGES IN THE UTERINE MUCOSA DURING PREGNANCY AND IN THE ATTACHED FŒTAL STRUCTURES.*

(*Continued.*)

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Decidua Serotina.

(Figs. 93-120.)

During the First Month.

In Reichert's early specimen no details of any importance are given regarding the minute structure of the serotina. In Mertten's early specimen (supposed by him to be 6-8 days old), to which I have already referred, he made out the following points. The compact layer had an average thickness of .35 mm. The outer parts of some of the glands were obliterated. The glands were lined with epithelium, in some parts columnar, in others cubical. In the compact layer large decidual cells with one or two nuclei were found, many being spindle-shaped and arranged parallel to the surface. At the surface was a layer, shaped like a half-moon, staining deeply red with eosine, evidently of fibrinous or hyaline material. In the compact layer were found many sinuses, round, oval, or irregular, containing blood. Here and there were found nucleated plasmodial masses among the decidual surface. In some cases these were extending down from the surface. In several instances they had pierced the walls of the sinuses. In the spongy layer the gland-spaces were increased in size. They were lined with columnar or cubical epithelium, which, in many places, appeared somewhat swollen, staining lightly. The spaces were large, oblique or parallel to the surface. In the outer part of the spongy layer some decidual cells were noticed. Here also were found irregular strands of deeply stained plasmodium. On the surface of the decidua was an irregular layer of the same tissues, which was continuous with the outermost epiblastic covering of the villi; and from it the masses extended into the decid-

*Read before the Royal Society of Edinburgh and awarded the first Research Prize of the Royal College of Physicians of Edinburgh in 1896.

ual tissue. This plasmodial tissue, or syncytium, as I shall afterwards show, is entirely of fœtal epiblastic nature. Merttens wrongly considers it to be maternal in origin.

As I have already stated, Merttens is very likely wrong in considering this specimen to be only 6-8 days old. It is probably several days older.

Schwabe has described a 13-15-day abortion. The serotina was very similar to that in Merttens' case. He noted the large blood-spaces in the compact layer. On the surface he also noticed a layer of nucleated protoplasm heaped up in masses at intervals. Projections of the epiblastic covering of some of the villi were seen to extend into the decidua. In E. Fränkel's 3½-week abortion the conditions found were much the same. The large decidual cells were almost entirely limited to the compact layer. The surface part showed the fibrin streak. Blood sinuses were seen to communicate with the intervillous space.

In Kupffer's 3-4 week specimen the same conditions were noticed. Sinuses were seen to open into the intervillous space. The epithelium in the glands was more altered than in those of the vera.

In Minot's one month specimen, the compact layer measured about one quarter of the thickness of the serotina. He noticed the branching of the large decidual cells. There was no special formation around vessels. Towards the spongy layer the cells were smaller. In the compact layer the glandular epithelium had been largely cast from the walls. The gland-spaces of the spongy layer were enlarged and distorted. In the smaller spaces the epithelium was columnar and fairly well preserved. In the larger ones the epithelium was somewhat broken up and thrown into the lumen; in many cases considerably degenerated.

At the Sixth Week.

The serotina is about 2-3 mm. in thickness, the compact layer measuring 1-5—1-4 of the whole. While in general the distinction between compact and spongy portions is easily made out in a few places, where the glands are scanty, the whole serotina might be described as compact. Variations in the structure of the mucosa occur in the non-pregnant normal uterus, and it is therefore not surprising to find them in any pregnant uterus.

Surface Epithelium.—No remains of the surface epithelium can be found except granular debris here and there. The views of certain authors *e. g.*, Merttens and Kossmann, that it is changed to a

plasmodial structure cannot be sustained. I shall refer to this later. There can be little doubt that the epithelium, which becomes less columnar, broken up and loosened from the surface as the decidual tissue beneath it forms rapidly, is destroyed and absorbed by the fœtal epiblast, which early comes into contact with it and afterwards remains in the position formerly occupied by the epithelium.

Glands.—The outer parts of the glands in the compact layer are largely obliterated. The epithelium in them is found in different conditions. In a few glands it is still columnar and attached. In most it is cubical or irregular and the cells are somewhat loosened; or in certain parts they are fused together, their inner surfaces being ragged and irregular. The nuclei are round or irregular. In many cases the cells are lying in the lumen, more or less degenerated. In the sponby layer similar changes are found in the glandular epithelium. Near the muscle some gland-ends exist with fairly-well preserved columnar cells.

The surface of the serotina is irregular, showing small elevations and depressions. No papillæ of any size are seen.

Interglandular Tissue.—The decidual tissue varies considerably. In parts are found masses of the characteristic, well-defined decidual cells with ovaly or rounded nuclei. In several places degeneration can be seen, the cells being somewhat swollen or fused into a faintly staining mass in which vacuolation is found, the nuclei being irregular in outline. Here and there the latter may, to a considerable extent, have lost their surrounding cell-substance. The superficial part of the compact layer is occupied by an irregular layer of fibrinous material, broken at intervals. In it may be found shrunken and degenerating cells. It stains very deeply with eosine. Here and there processes from it extend inwards, showing transitions from faintly to deeply stained parts. It is very likely that the former is the earliest stage in the process of degeneration. These appearances may be found around several blood sinuses.

This must be distinguished from fibrin masses on the surface or in the decidua resulting from blood coagulation. In the latter, usually, red corpuscles may be seen.

Scattered between the degenerating decidual tissues are masses of cells quite distinct from the pale areas of degenerating decidual cells. They are found in various sizes and shapes, mostly in strands. The matrix and nuclei stain deeply. These masses may also be found here and there in the outer part of the spongy layer. The decidual cells, on careful examination, are found to anastomose with

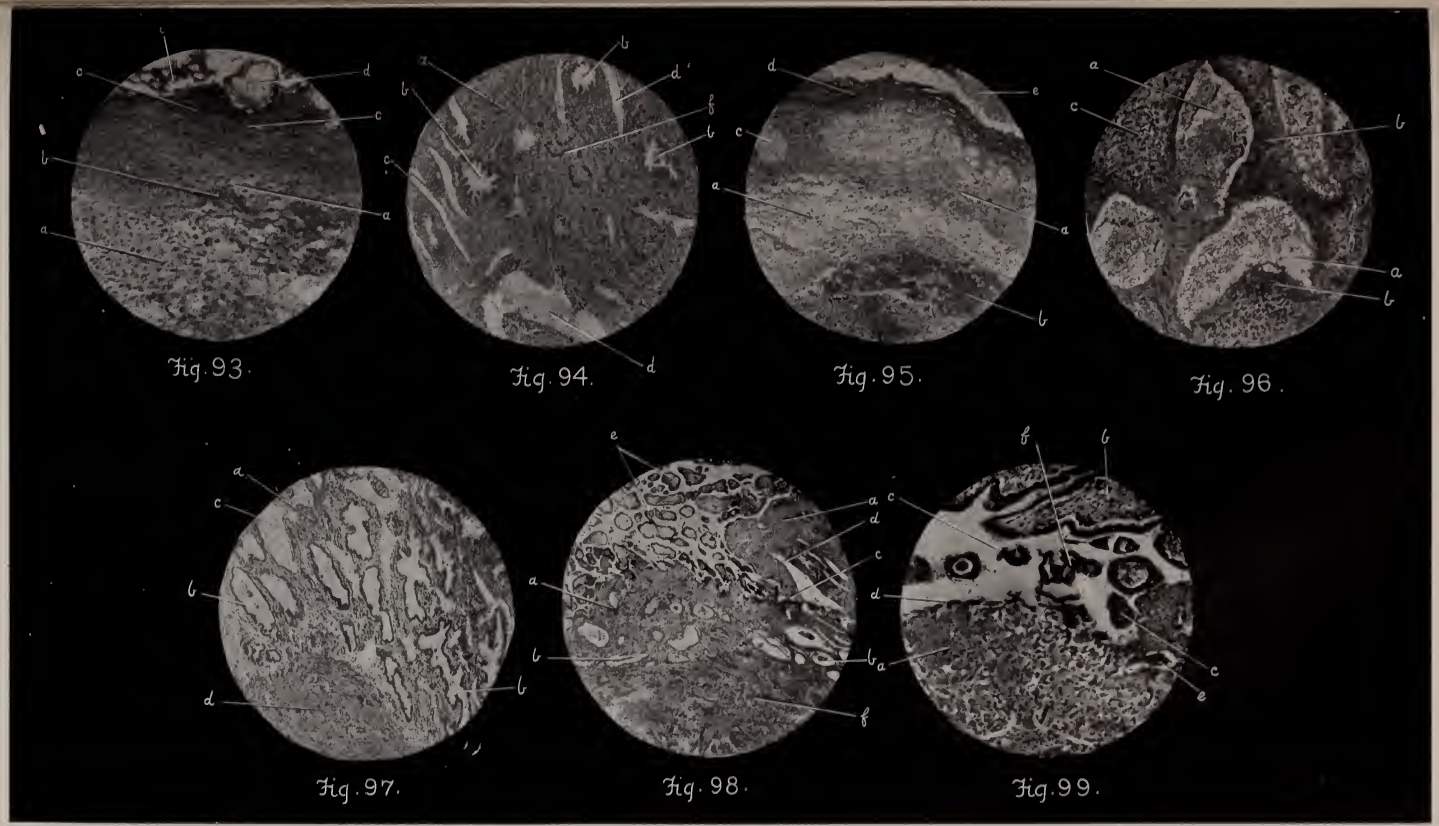

FIG. 93. SECTION OF SEROTINA FROM 5-WEEK ABORTION SPECIMEN.

a, decidual cells; *b*, hyaline degeneration; *c*, the same at surface of decidua; *d*, villus attached to surface; *e*, reticulated plasmodial remains. X. 80.

FIG. 94. ANOTHER FROM THE SAME.

a, compact decidual tissue: *b*, gland space with epithelium largely pre-lium cast off; *d*, blood sinus; *e*, plasmodial mass. X. 60.

FIG. 95. ANOTHER FROM THE SAME.

a, decidual tissue; *b*, blood extravasation; *c*, blood sinus; *d*, hyaline or fibrinous degeneration at surface of serotina; *e*, blood in inter-villus space. X. 60.

FIG. 96. ANOTHER FROM THE SAME.

a, blood sinus; *b*, hyaline degeneration; *c*, the same in decidual tis-

FIG. 97. SECTION FROM SPECIMEN OF 6-WEEK PREGNANT UTERUS.

a, decidual tissue between glands; *b*, gland space with epithelium on walls; *c*, gland-space with epithelium absent; *d*, muscular part of uterine wall. X. 80.

Fig. 98. SECTION FROM 6-WEEK PREGNANT UTERUS.

No distinction between compact

a, Serotina; note its irregular thickness; *b*, gland-space close to muscle; *c*, deep depression in decidua; *d*, blood sinus; *e*, villi; *f*, muscle of uterine wall. X. 25.

Fig. 99. ANOTHER FROM THE SAME.

a, decidual tissue of serotina; *b*, villus stem; *c*, plasmodial mass; *d*, irregular plasmodial mass on surface of decidua; *e*, multi-nucleated plasmodial mass in substance of decidua; *f*, irregular reticulated

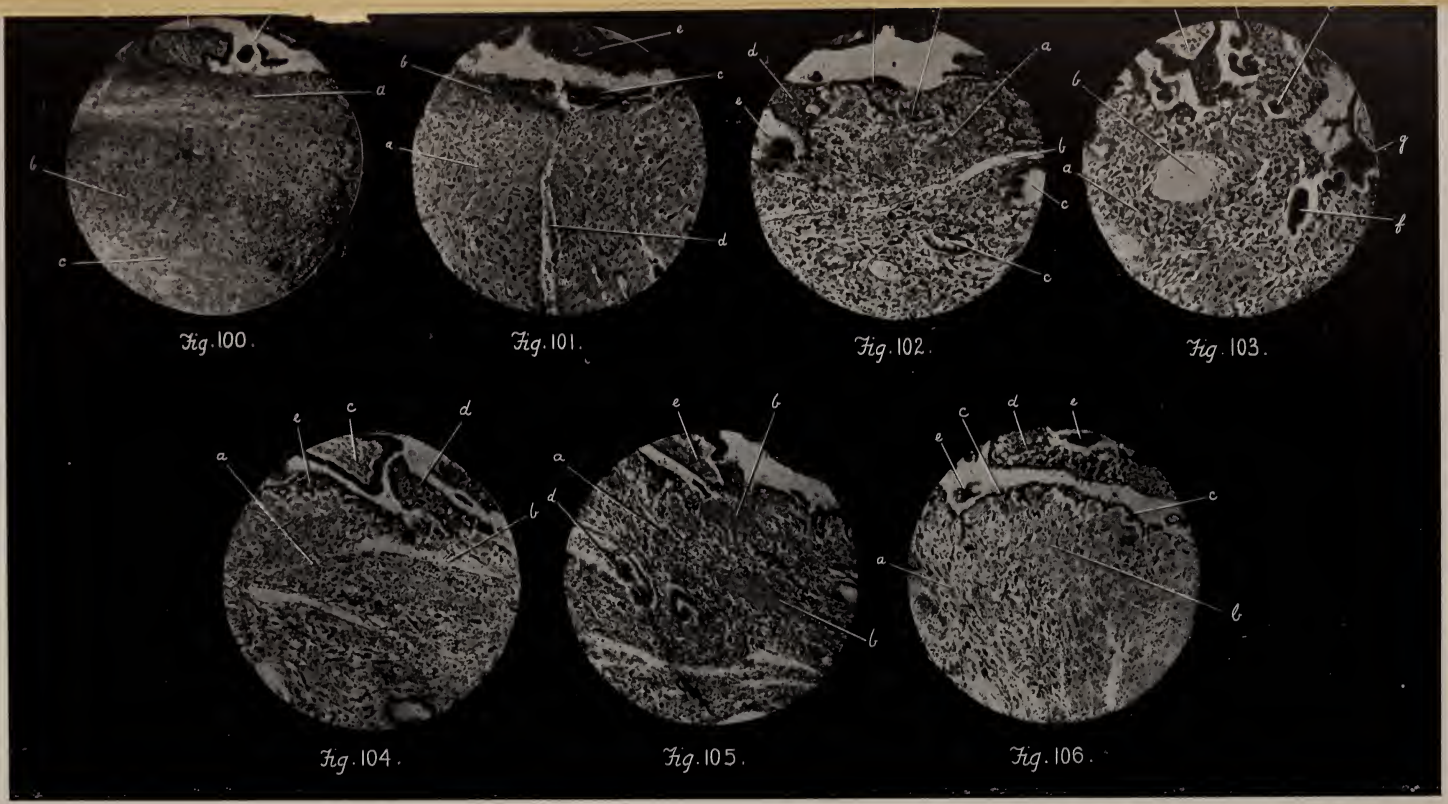

FIG. 100. ANOTHER FROM THE SAME.

a, hyaline degeneration at surface; *b*, decidual tissue of serotina; *c*, degenerating decidual tissue; *d*, nucleated plasmodial mass; *e*, villus attached to decidua. X. 80.

FIG. 101. ANOTHER FROM THE SAME.

a, decidual tissue of serotina; *b*, hyaline degeneration at surface; *c*, nucleated plasmodial mass; *d*, sinus extending towards surface; *e*, villus X. 80.

FIG. 102. ANOTHER FROM THE SAME.

a, decidual cells of serotina; *b*, blood-sinus; *c*, gland space, epithelium partly removed; *d*, villus attached to serotina by great proliferation of *Zell-schicht*; *e*, plasmod al mass on decidual surface; *f*, plasmodial mass on substance of decidua. X. 80.

FIG. 103. ANOTHER FROM THE SAME.

a, decidual cells; *b*, blood sinus; *c*, villus with stalk of plasmodium at end; *d*, mass of plasmodium on surface of decidual hillock; *e*, plasmodial mass in the substance of decidual hillock; *f*, another in the decidua; *g*, a large irregular plasmodial mass at surface of decidua. The decidua near it has an eroded appearance as if being absorbed. X. 80.

FIG. 104. ANOTHER FROM THE SAME.

a, decidual tissue; *b*, sinus near surface; at its left side it communicates with the inter-villus space; plasmodial masses extend between its outer wall and the surface of the decidua; *c*, villus; *d*, end of villus attached to serotina by proliferated *Zell-schicht*; *e*, irregular plasmodial mass on surface of decidua. X. 80.

FIG, 105. ANOTHER FROM THE SAME.

a, decidual cells of serotina; *b*, hyaline degeneration of decidua: *c*, villus; *d*, remains of gland-space. X. 80.

FIG. 106. ANOTHER FROM THE SAME.

a, decidual cells of serotina; *b*, hyaline degeneration; *c*, nucleated plasmodial mass on surface of decidua; *d*, villus; *e*, free mass of plasmodium. X. 80.

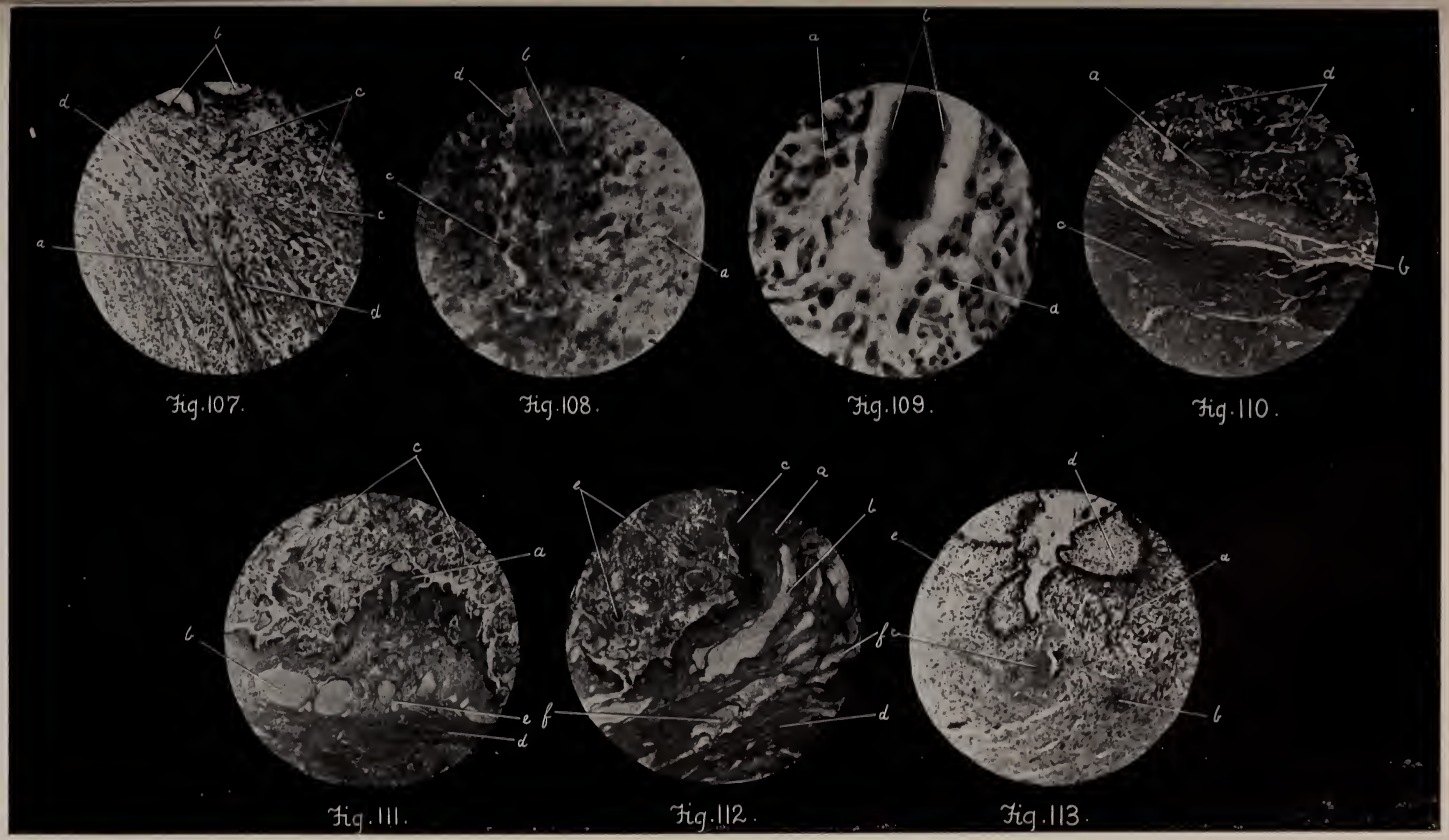

FIG. 107. ANOTHER SECTION FROM 6-WEEK PREGNANT UTERUS.

a, muscular part of uterine wall; *b*, gland-space at junction of spongy and muscular layers; *c*, decidual cells below the level of the glands; *d*, mass of plasmodium extending between the muscular bundles. X. 80.

FIG. 108. ANOTHER FROM THE SAME.

a, faintly staining degenerated decidual cells near the surface of the compact layer; they are irregular in shape and the nuclei stain deeply; *b*, mass of plasmodium in a depression of surface. X. 300.

FIG. 109. ANOTHER FROM THE SAME.

a, faintly staining degenerated decidual cells near the surface of the compact layer; they are irregular in shape and the nuclei stain deeply; *b*, mass of plasmodium in a depression of surface. X. 300.

FIG. 110. SECTION OF SEROTINA FROM A 4-MONTH PREGNANT UTERUS.

a, decidual cells of serotina; *b*, degenerating cells, *c*, patch of hyaline degeneration; *d*, villus attached by proliferation of *Zell-schicht*; *e*, villus

FIG. 111. ANOTHER FROM THE SAME.

a, decidual hillock; *b*, blood sinus; *c*, villi; *d*, muscle of uterine wall; *e*, spongy part of decidua. X. 25.

FIG. 112. ANOTHER FROM THE SAME.

a, decidual hillock; *b*, blood sinus; *c*, villi; *d*, muscle of uterine wall; *e*, spongy part of decidua. X. 25.

FIG. 113. ANOTHER FROM THE SAME.

a, decidual cells of serotina; *b*, degenerating cells, *c*, patch of hyaline degeneration; *d*, villus attached by proliferation of *Zell-schicht*; *e*, villus

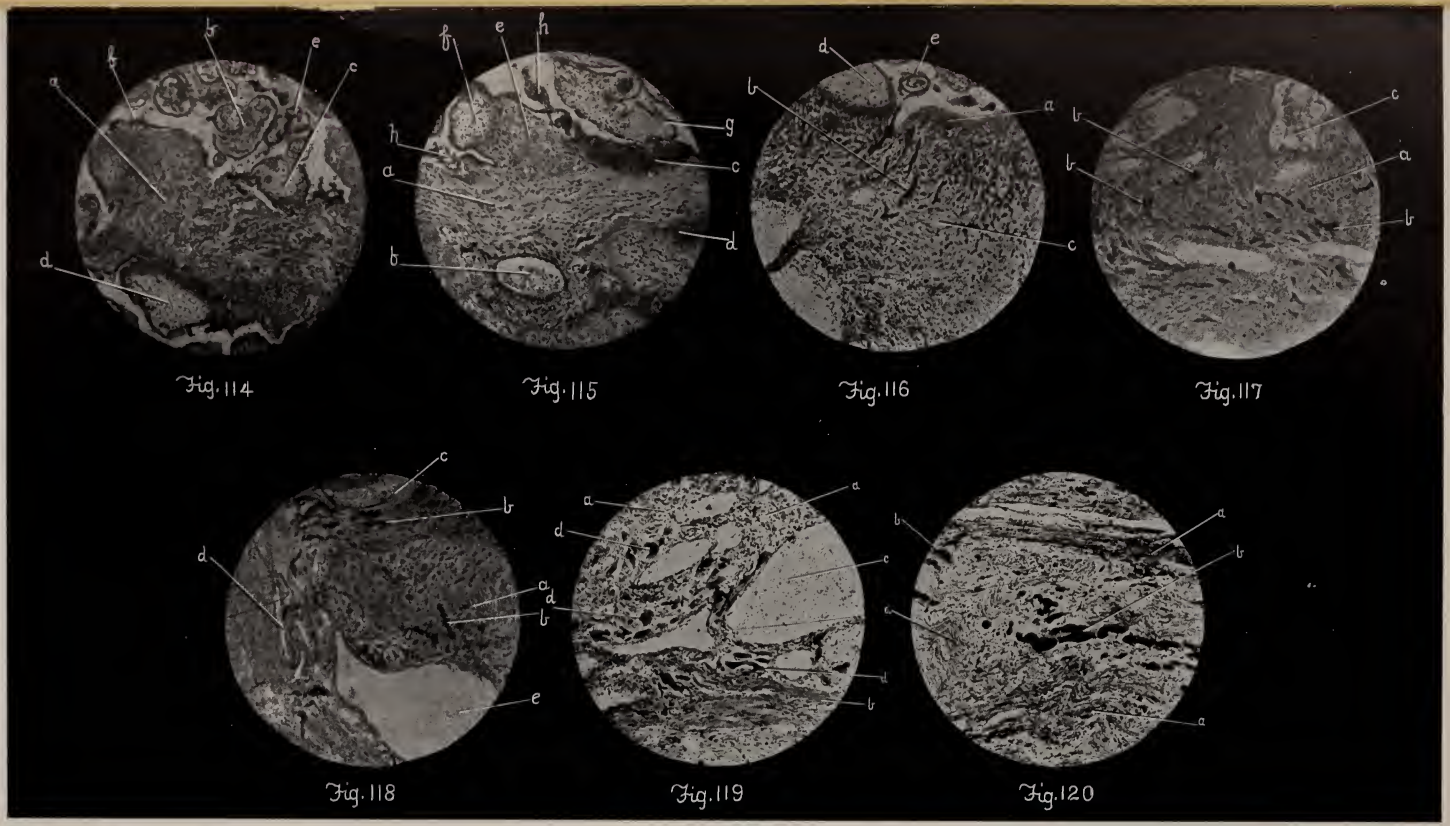

FIG. 114. ANOTHER FROM THE SAME.

a, decidual hillock; *b*, villus; *c*, villus attached to decidua at two points; *d*, villus attached by proliferation of *Zell-schicht*; *e*, irregular plasmodial mass; *f*, plasmodial mass attached to hillock of decidua. X. 40.

FIG. 115. ANOTHER FROM THE SAME.

a, compact layer of decidua; note chain-like rows of cells; *b*, blood-sinus; *c*, hyaline degeneration at surface; *d*, hyaline degeneration in decidua; *e*, decidual hillock; *f*, attached villus; *g*, villus; *h*, irregular mass of plasmodium on surface of decidua. X. 40.

FIG. 116. ANOTHER SECTION FROM 4-MONTH PREGNANCY SPECIMEN.

a, hyaline degeneration at surface of decidua; *b*, irregular plasmodial mass extending into decidua; *c*, small capillary; *d*, villus attached to decidua; *e*, irregular strand of protoplasm. X. 40.

FIG. 117. ANOTHER FROM THE SAME.

a, decidual cells of serotina; *b*, plasmodial mass in decidua; *c*, gland space. X. 40

FIG. 118. ANOTHER FROM THE SAME.

a, decidual cells; *b*, plasmodial mass in decidua; *c*, gland space; *d*, blood vessel. X. 40.

FIG. 119. ANOTHER FROM THE SAME.

a, decidual tissue of spongy layer; *b*, muscular part of uterine wall; *c*, large gland space into which blood has found its way; *d*, plasmodial mass in decidua. X. 40.

FIG. 120. ANOTHER FROM THE SAME.

a, muscular wall just below decidua; *b*, plasmodial mass which has penetrated muscle. X. 40

the surrounding degenerating cells. They are probably active and growing and have not begun to degenerate.

It is interesting to note that in the Vera no such appearance is found save close to the serotina. There the degeneration is of a different nature, more diffuse and slower.

On the surface none of the pre-existing epithelium exists. At intervals the villi are attached.

Syncytium.—Between the villi are attached somewhat flattened masses of nucleated protoplasm—plasmodium or synctium. It appears to be a much less uniform and more broken layer than in Merttens' early specimen. No distinction into cells can be made out. The protoplasm is finely granular and takes on a deep stain. The nuclei are irregularly rounded and also stain deeply. Some of these masses have only a single row of nuclei, others have several. In others the nuclei are irregularly distributed. At intervals the masses are thickened, resembling very large multi-nucleated giant cells. Here and there prolongations extend out for short distances in the intervillous space. In a few places this plasmodial tissue has a reticular structure, consisting of irregular spaces and trabeculæ.

Some of the stalks extending outwards are attached to the ends of the villi near the surface, and the outer epiblastic covering of those villi which are joined to the decidua is continuous with adjacent masses lying on the surface of the serotina. Their identity is as evident as their continuity, and has been recognized by several observers, though there is a difference of opinion as to the origin and significance of the syncytium.

Merttens and Kossmann have recently directed considerable attention to it. They believe that its origin is the epithelium of the surface of the mucosa and uterine glands. I have pointed out the existence of the syncytium on the decidual surface in tubal pregnancy, and have stated why I believed it to be the remains of the outer epiblastic layer of the early blastocyst, and probably trophoblastic in nature, leading to the absorption of the epithelial cells on the surface of the mucosa.

It is very important to observe that *the vera at the sixth week shows not a trace of syncytium, when the latter is abundantly present on the serotina.* Indeed, at this period, as I have shown, large portions of the vera are covered with the original cells, somewhat flattened, certainly, and varying in shape, but showing no trace whatever of a transformation into syncytium.

Of great interest are the processes of this material which are found extending into the substance of the decidua. These are

found in irregular strands and masses of various sizes, quite distinct from surrounding decidual tissue. They extend inwards mainly obliquely. It is probably owing to this arrangement that so many detached pieces are found in microscopic sections, the strands not being divided in their continuity. Separate pieces may be found in the spongy layer or even in the muscular layer; it is difficult to say whether these work their own way, or are carried in lymph or blood streams. Near the surface, strands may sometimes be seen extending into the blood sinuses, to whose walls they may become attached. Some vessels may be found almost or completely filled by them.

I have pointed out that Merttens has also recently described these appearances in his earlier specimen. But he has also wrongly supposed them to be the product of the original mucosal epithelium.

Blood Vessels.—A few small capillaries may be seen in the compact layer. For the most part only large sinuses exist. Here and there one may be noticed opening into the intervillous space. In most cases the endothelium is well preserved. In some, masses of syncytium which have penetrated them are attached to the wall. Very rarely does a villus dip into the mouth of a sinus, where it may hang free or be attached to the wall. I can make out no distinction between arteries and veins in the compact layer. The sinuses are practically dilated capillaries, and according to the flow of the stream of blood the openings into the intervillous space may be called afferent and efferent. In the spongy layer the small arteries run tortuously outwards. In several is found end-arteritis. Here and there is seen a thickening or condensation of the surrounding decidual tissue.

At the Fourth Month.

The serotina is somewhat more irregular on its inner surface, so that its thickness varies more than at earlier periods. Thus, different measurements are found, *e. g.*, from 1 to 2.5 mm. Here and there small hillocks of decidua extend from the surface measuring in height from 0.5 to 1.5 mm. Occasionally they may be found longer. These hillocks are very irregularly distributed. Over considerable portions none exist.

On the average the serotina is thinner than it was during the second month, the reduction having taken place both in the compact and spongy layers. In the compact layer a few small gland-spaces are seen, considerably compressed. Very few cells are attached to their walls. In the spongy layer the gland-spaces are greatly compressed and are lying largely parallel to the surface. They are almost en-

tirely empty of epithelium. What does exist is in a state of degeneration. Close to the muscle a small space may be found, here and there, lined with a layer of cubical cells.

The fibrinous degeneration in the decidual tissue has advanced considerably. It is mainly in the superficial layers, but extensions downwards are found. The oldest portions are dense and structureless, containing shrunken and broken-down nuclei. Vacuolation is marked in parts. The staining with eosine is deep. In many parts fairly normal cells are found. Near the surface these are arranged parallel to it. Here and there the cells are fused together, vacuoles being present in the matrix or in the nuclei. Other cells are irregular in outline. These various conditions, except the advanced fibrinous degeneration, are found also in the spongy layer.

Masses of syncytium are found scattered irregularly through the whole decidua, being also found in adjacent parts of the muscular layer. They lie in spaces in the connective tissue, but are also found in a few vessels. On the surface of the decidua masses are found with outward and inward prolongations, just as in the six-week specimen. The villi are generally more markedly attached to the surface, *i. e.*, whereas at the sixth week they were on a level with it, now their ends have become embedded, slightly in most cases, considerably in others.

Blood sinuses are relatively not so numerous as at an earlier period. Some undilated capillaries are seen. The walls of several vessels are surrounded with thick fibrin, as a result of which the lumen has been considerably contracted. Also, in several, endothelial proliferation is found; this change may also be found in vessels in the muscular part of the uterine wall.

On the surface sinuses are seen, which communicate with the intervillous space. Rarely does a villus extend into the opening. Very few vessels in the well-formed hillocks communicate with the intervillous space, and they are, like the other thin-walled sinuses, formed from dilated capillaries. I can make out no special structure characteristic of artery or vein in them.

At the Sixth Month.

The decidua varies in thickness, variations being found both in the compact and spongy parts. The surface is irregular, but most of the elevations are not so prominent as at earlier periods of pregnancy. Here and there, however, a hillock rises to the height of 1 or 2 mm. Very few traces of glands remain in the compact layer; they are in the form of a narrow canal filled with debris, or of a single or double row of cubical cells compressed by decidual tissue.

The spaces in the spongy layer are considerably elongated, lying parallel to the surface, largely free of lining epithelium or even of degenerated remains in the lumen. In the deepest portions of some a lining of cubical cells exists.

In the compact layer the fibrinous degeneration is more marked than it was at the fourth month. It is still mainly near the surface, but is also found in scattered masses deeper down.

Very slight traces are found in the spongy layer. The decidual cells which are not affected vary in appearance. They appear as irregular groups of rounded cells or as masses of spindle-cells, closely packed and arranged parallel to the surface. In some parts the loose reticular arrangement is well seen. Here and there vacuolation is found in nuclei or cell-matrices. On the whole the cells nearest the surface are largest and most densely stained. In the outer parts of the spongy layer well-marked decidual cells exist. They extend downwards for varying distances.

Masses of syncytium are found throughout the decidua, but not at all as abundantly as at the fourth month. It is also seen in strips or in masses on the surface, but relatively less of the surface is covered by these masses and they are, on the average, thinner than at earlier periods.

The blood sinuses, on the whole, are not so large as in the early months, and they are less crowded. Their distribution varies in different parts. Several are considerably diminished by the apparent fibrinous changes in or around the wall. Marked thickening of the intima is noticed in some of the smaller vessels leading to the sinuses. In several the lumen is nearly closed. These changes are also found in some of the vessels in the spongy layer and in several in the muscle.

At Full Time.

The serotina varies greatly in structure at different parts. In some places it is almost absent, only the thinnest layer of decidua intervening between the muscular layer and the villi. In a few parts it is entirely wanting, the villi being next the muscle. These parts must have been thin at the commencement, and their disappearance is due to mechanical stretching and to physiological absorption.

Over a large extent its thickness only measures from 0.5 to 1 mm. Here and there hillocks both narrow and broad project from the surface. The compact and spongy layers have been thinned differently in different places. The trabeculæ of the latter are very narrow. Some appear to have been torn across or absorbed.

In the compact layer very few traces of glands exist; their epithe-

lium is entirely absent. In the spongy layer the elongated narrow spaces are arranged mostly parallel to the muscle. In most there is no debris of epithelium. Only very few close-to or between muscle-bundles have a lining, partial or complete, of cubical epithelium. These are flattened parallel to the surface.

The decidual tissue presents varied appearances. The superficial portions of the compact layer are largely changed into the fibrinous material, which stains very deeply. Some parts of this are dense, being striated. Others are of a looser texture, vacuolation being present in it. Embedded in it are nuclei in various stages of degeneration. Immediately under this is an irregular area of less deeply-staining fibrinous tissue in which cell-outlines and nuclei may be more marked. Also masses of decidual cells are found with a swollen appearance and staining lightly. In many the cell substance or the nucleus is vacuolated. In other parts well-formed large decidual cells are seen, those nearest the surface lying more or less parallel to it. It is noticeable that they take on the stains with varying intensity in different parts. Here and there masses of well-marked branching and anastomosing cells are found, the cells having one or two nuclei.

Leucocytes are not numerous anywhere, least of all where the fibrinous material predominates. In the trabeculæ of the spongy layer, the cells are not of very large size, the largest being in the outer portions. Some show marks of degeneration. Scattered in the decidua and neighboring muscle irregular masses of syncytium, varying in size and shape, are found. In some places the decidua surrounding a large mass gives one the impression of gradually being absorbed by the syncytium.

On the surface masses and strips are found, but they are more flattened and shrunken. They cover relatively much less of the surface than in the early months.

The sinuses vary considerably in distribution and appearance, as was the case at the sixth month. The same changes then noted exist, viz.: the contraction of many by fibrinous thickening around them, the partial or complete closure of some of the small vessels in the decidual and muscular wall, due to thickening of the intima.

Here and there blood-extravasation is found in the decidua. It may be found both among the cells and in the gland-spaces.

PERSONAL EXPERIENCES WITH VAGINAL SECTION.*

By A. Brothers, B.S., M.D.

In choosing a subject of this nature as my thesis for admission to your honorable society, I do so with the full but modest consciousness that I am presenting very little that is new to you, and that, in this same line of work, there are many among you who can easily quadruple my list of cases. I appreciate, however, the fact that you are not looking for literary men in your midst whose chief virtues consist in collecting large masses of facts from the experience of others, and in presenting you with formidable bibliographical tables. I rather incline to the view that you prefer as fellow-members those who are active workers themselves, and who are able to present you from time to time with samples of their own workmanship. Hence I have selected as my theme a branch of operative gynæcological work, which is as yet comparatively new. If, in this short paper, the description of my individual work can assist in clearing the fog, which at present overhangs the legitimate scope of colpotomy or vaginal section, I shall feel myself fully repaid for the slight effort it required.

Although my personal experience with vaginal section is only limited to sixteen cases, I have either been present or assisted at dozens of others in the practice of my hospital associates and other operators throughout the city. This, I think, fairly gives me the advantage of surveying an area far beyond the horizon of my own individual work. In the enthusiasm of a new operation, the tendency is to present to the light of publicity only the most brilliant and successful cases. Only in the course of time is the thin varnish rubbed off, and the true value of that which lies beneath brought to the surface. I propose to somewhat modify this routine method by giving my entire experience exactly as I have met it. I approached the subject originally from an impartial standpoint, and I propose to review my work down to the present moment in the same spirit.

A detailed description with histories of sixteen cases would be manifestly inappropriate in the present paper, and unjustly impose on the patience of those kind enough to give me their attention. Hence I will content myself by appending the following brief table:

*Read before the New York Obstetrical Society, March 2, 1897.

SYNOPSIS OF SIXTEEN CASES OF VAGINAL SECTION.

No	Operated for	Nature of Operation.	Immediate result.	Remarks.
1	Cervical Stenosis; Retroflexed uterus (fixed).	Dilatation of uterus and glass stem; Anterior Colpotomy; vagino-fixation.	Recovery.	Peritoneum not opened; Partial Relapse.
2	Retroflexed uterus (fixed).	Dilatation of uterus and glass stem; Anterior Colpotomy; vagino-fixation.	"	Peritoneum opened. Adnexa examined. Pregnancy. Miscarriage at third month. Relapse.
3	Retroflexed uterus (movable) Lacerated Cervix; lacerated perineum; rectocele, cystocle	Dilatation of uterus and glass stem; Anterior Colpotomy; vagino-fixation; trachelorrhaphy perineorrhaphy, colporrhaphy.	"	Permanent relief.
4	Retroflexed uterus (movable).	Anterior Colpotomy; vagino-fixation	"	Adnexa examined.
5	Retroflexed uterus (movable).	Anterior Colpotomy; vagino-fixation.	"	Adnexa examined.
6	Salpingo oöphoritis (left).	Anterior Colpotomy; vagino-fixation; salpingo oöphorectomy.	"	Opposite adnexa examined and not molested.
7	Chronic Endometritis; Bilateral Disease of adnexa.	Curettage and Packing; Anterior Colpotomy removal of diseased adnexa; vagino-fixation.	"	Relieved for a year. Vaginal hysterectomy later.
8	Dermoid Cyst of left ovary.	Anterior Colpotomy; tumor removed; vagino-fixation.	"	Became pregnant. Fearful dystocia requiring craniotomy as result of the vagino-fixation.
9	Salpingo oöphoritis (left).	Posterior Colpotomy; salpingo oöphorectomy.	"	Dense adhesions. Adnexa torn during delivery, bleeding controlled by packing.
10	Cyst of left ovary with hydrosalpinx.	Anterior Colpotomy; removal of diseased mass.	"	Opposite adnexa examined and not molested.
11	Chronic bilateral salpingo oöphoritis.	Posterior Colpotomy; removal of diseased adnexa on both sides.	"	Considerable difficulty due to dense adhesions. Ligatures discharged several months later.
12	Ovarian cysts on both sides, hydrosapinx (left).	Anterior Colpotomy; removal of adnexa on both sides.	"	
13	Exploratory purposes.	Posterior Colpotomy; amputation of left tube.	"	Adnexa normal excepting left tube which was thickened and occluded.
14	Left ovarian cyst hydro-salpinx.	Anterior Colpotomy; removal of tumors.	"	Hemorrhage uncontrollable through vaginal incision and required immediate laparotomy.
15	Cervical Stenosis; cystic ovary with salpingitis (left).	Dilatation and packing; posterior colpotomy; removal of diseased tube and ovary.	"	Opposite adnexa examined and found normal.
16	Fungoid endometritis large hydrosalpinx (left).	Curettage and packing; posterior colpotomy; incision and drainage of hydro-salpinx.	"	No recurrence or symptoms three months later.

From the list of cases it will be seen that I have operated eleven times with an anterior incision and five times with a posterior incision. Although the number of cases is quite limited for the purposes of making sweeping deductions, it will be conceded that intelligent conclusions can often be reached before hundreds of women have been operated upon by one particular method.

For backward displacement of the uterus I have done vagino-fixation seven times, making my incision in the anterior vaginal wall, and, in most of the cases, opening the peritoneal cavity. The uterus was then united at the fundus to the vaginal wall, just beneath the urethral orifice. I will state at this point that I have not done this operation in over a year, and for the following reasons: In the first place, a number of the cases, after a brief period of relief, returned with the uterus again displaced backwards, showing that the operation had failed. In one case (No. 2) the patient became pregnant, miscarried at the third month, and the uterus again fell back in its abnormal position. In another case (No. 8) union was so extremely firm that delivery at term was associated with fearful dystocia in a woman who had previously given birth to a number of children without any special difficulty. In this case my friend, Dr. L. J. Ladinski, who assisted at the accouchement, tells me that the anterior uterine wall seemed as if fixed by a solid tumor. The cervix was accessible only after a long, tedious labor. Efforts at version and high forceps failed, and only after craniotomy was performed was it possible to extract the child. I believe this to be the first case of dystocia after vagino-fixation which has been reported in America. Lastly (No. 7) in a case in which hysterectomy was later performed, the adhesions between uterus and vagina were so extensive and firm that they had to be divided with scissors. As a result of his unusual complication the ureter on the right side was unintentionally injured and the patient has required subsequent operative relief.

For the removal of diseased tubes and ovaries—chronic salpingo-oöphoritis, cystic atrophic ovaries, dermoid and simple cysts of moderate size, thickened and occluded tubes, pus tubes, and hydro-salpinx—I have operated per vaginam ten times. Some of these cases are included in the last group. My conclusions at present are that these operations are always performed with greater difficulty than when done from above. They are contra-indicated as a rule in multiparæ, and in cases in which there is reason to suspect extensive or firm adhesions. In multiparæ, however, in whom the uterus can be drawn well down to the vulva, many of these cases prove quite simple. As the diseased annexa are found to lie anteriorly or pos-

teriorly the operator often finds it feasible to select between anterior or posterior colpotomy.

In a few cases I have opened the posterior fornix for exploratory purposes only in cases of vague pelvic pains. At times slight adhesions about the adnexa can be discovered which it would be absolutely impossible to diagnosticate by ordinary methods. In one case a thickened tube was found and removed. In all of my cases in which the peritoneal cavity was opened I have tried to satisfy myself by vision and touch as to the exact condition of the adnexa. When normal the parts were not molested. I would here warn against excessive curiosity in some of these cases. Thus, when possible, the tube and ovary were brought out of the wound and inspected. But if there was any difficulty, as from shortness of the ovarian ligament, the diagnosis was made from the sense of touch only. Experience and observation in the practice of others have taught me that violent efforts to bring the tube and ovary into view may at times lead to injury of normal adnexa, and require ultimately their removal in cases in which otherwise they might have been safely left.

I have done "conservative" surgery in a few cases through the vaginal incision. In one case (No. 16) through a posterior incision, a large adherent hydro-salpinx was incised and drained. Not included in these cases, I may refer to similar interference which I have practiced in cases of pelvic abscess, adherent pus tubes and hematosalpinx. In some cases of cystic ovaries it was deemed sufficient to puncture the small cysts and leave them alone or pass a few Lembert sutures over the line of incision. I believe that in the last two groups of cases—exploratory operations and cases for "conservative" work—the field per vaginam will find its greatest usefulness.

In all of the cases the patients recovered, so that the operation can be considered fairly safe in competent hands. Still in one case (No. 14) hemorrhage became quite alarming and, owing to its inaccessibility, required an immediate laparotomy. This case I have published elsewhere. In the practice of other operators of acknowledged repute I may remind you that the same unexpected complication has required also laparotomy or vaginal hysterectomy. Puncture of the bladder during vagino-fixation has occurred to me once and to one of my hospital colleagues, whose name, however, I am not permitted to quote. Both patients recovered, although for a time they passed bloody urine. Further injury to the bladder has not occurred in my cases of anterior vaginal section, although I know of one case in which the operator passed his finger into the

cavity of the bladder while stripping this viscus from the uterine wall. In quite a number of cases—after salpingo-oöphorectomy—a hematoma formed. In others, especially when silk ligatures were employed and left in the peritoneal cavity, an exudate formed, and the patients suffered from a mild rise of temperature, probably due to septic absorption. In one case (No. 8) the temperature ranged between 103° and 105° during several weeks and required an incision to permit of the escape of some pus. In another case (No. 11) in which posterior colpotomy was done the silk ligatures were discharged several months later through the original incision.

There has been nothing original in my method of operating. In the anterior vaginal section, having seized the cervix and drawn it downwards with strong volsella forceps the vaginal mucous membrane was seized just below the urethral orifice by a second pair of volsella forceps and thus the anterior vaginal wall put on the stretch. By making a longitudinal median incision the vaginal mucous membrane was next dissected from underlying parts to either side. With the aid of a lower transverse cut the bladder could readily be pushed with the fingers above the fundus of the uterus and then the vesico-uterine fold of peritoneum torn or opened with scissors. The examining fingers could next be introduced into the peritoneal cavity. In those cases in which it was necessary to closely examine or operate the adnexa or tumors it was found of considerable assistance to deliver the fundus of the uterus down to the vulva. This could usually be accomplished by pressure from above (pushing the cervix backwards at the same time), or by tenacula or temporary climbing sutures of silk introduced at progressively higher levels in the uterine wall. The diseased adnexa could then, as a rule, be delivered and amputated or, in the case of cystic tumors, they could be first punctured and then the sac tied off. In case of persistent oozing the stump was fairly accessible for the introduction of hemostatic sutures. In only one case was this not possible because of hemorrhage from torn adhesions behind the uterus low down.

In the posterior operation—posterior colpotomy—the cul de sac of Douglas was opened through a short longitudinal or lateral incision with a pair of sharp-pointed scissors. As in the former operation the cervix was seized with volsella forceps and the posterior vaginal wall rendered tense. This method is far simpler and more rapid than that last described. In careful hands the risk of opening into the rectum is slight, whereas, in the anterior section, it is desirable to locate the bladder from time to time with a sound in its interior. Although possible it was not deemed necessary in these

cases to deliver the fundus. With a pair of curved sponge forceps the ovarian ligament was seized and thus the ovary and fallopian tube drawn sufficiently forwards to render their delivery with the index finger possible. In all cases it is well to determine the length of the ligament binding the ovary to the uterus as well as the existence and firmness of adhesions before attempting the delivery of the adnexa; otherwise laceration of tube or ovary will certainly occur necessitating their removal in cases in which they might safely be left alone or treated on conservative principles. In both operations the wounds in the anterior or posterior vaginal walls can be closed with sutures or drained with gauze. As these cases under all circumstances are usually healed in three weeks, I deem it wiser to introduce a narrow strip of gauze to prevent the formation of a hematoma due to moderate oozing from stump or adhesions. Later dressings under anæsthesia I deem unnecessary and have never practiced them in my own cases.

Although ushered in with much enthusiasm and advocated by some of our most prominent gynæcologists, I think that the field for vaginal work is becoming more and more circumscribed. It must be conceded that there is something quite enticing about the possibility of operating for diseased pelvic conditions per vaginam. The certain advantages of diminished post-operative shock, absence of hernia, or abdominal scar justify this feeling. But we must remember that, after all, we are operating through the lumen of the vagina with the fingers working in its depths and mostly unaided by the sense of sight. The method does not follow that of ideal surgery in which we look for a broad clear field at every step. We must remember that after delivering the tube and ovary we have put the tissues very much on the stretch. After passing the pedicle ligature, it may loosen on its being returned into the peritoneal cavity and permit of free hemorrhage. Or the ovarian vessels may shrink beyond the constricting influence of the ligature, and give rise to hematoma of the broad ligament. These objections are not theoretical. A dozen cases at least have occurred in which, in order to control an unexpected and inaccessible hemorrhage, vaginal section had to be supplemented by hysterectomy or laparotomy. In this city I am personally acquainted with the occurrence of such hemorrhage in four cases which required for its control either of these secondary operations. Fehling refers to twelve cases of vaginal section for ovarian cysts, in four of which, for various reasons, the operation could not be completed without the addition of total removal of the uterus or laparotomy. The visiting gynæcologist of one of the largest hospitals in New York—a gentleman with an in-

ternational reputation as an operator—told me frankly that his "hair stood on end" during one of these unexpected hemorrhages. Under these circumstances we are certainly justified in seeking the limitations for this new field of intra-pelvic operative work.

In backward displacements of the uterus anterior colpotomy with vagino-fixation has been abandoned by most operators. As before stated, I have not done this operation in over a year. Mackenrodt, the originator of this operation, now contents himself with fastening the fundus uteri to the vesical fold of peritoneum. Wertheim, Vineberg and others attach the round ligaments to the roof of the vagina. Polk loosens the round ligament on either side and sutures one to the other in the median line anterior to the uterus, at the same time shortening the utero-sacral ligaments through a posterior incision. From my own work on the cadaver and from witnessing these operations in the practice of others I am led to the conclusion that, although quite feasible, they are difficult. Most of the work must be done by the sense of touch in a limited field usually covered by oozing blood. One of these gentlemen told me that he thought the operation tended to produce prolapsus. On the whole, I am inclined to the belief that vaginal fixation in any form is inferior to Alexander's operation when done by an expert.

In cases of small mural fibroids in the anterior uterine wall A. Martin highly lauds anterior colpotomy with splitting of the uterine tissue and removal of the growth. Vineberg has likewise been able to remove a sub-peritoneal fibroid through a similar incision. For tumors of any size the method is inapplicable.

Extra-uterine pregnancy with hematoma between the folds of the broad ligament may be treated by vaginal incision and drainage. The complete removal of the sac, as practiced by Mackenrodt and others, is hardly justifiable on account of the difficulties in the way of treating adhesions and controlling hemorrhage. It is a question whether all cases are not better attacked through an abdominal opening, for cases of violent or even fatal hemorrhage from simple incision into such a hematoma have been put on record (Boldt, Fehling).

In cysts or tumors of the broad ligament the vaginal incision is inferior to that through the abdominal wall. In such cases it is usually impossible to get the tumor down, and one is obliged to work almost exclusively with the fingers in the dark. I have known one operator to spend an extra half-hour in passing sutures through the stump before bleeding could be controlled after removing such an intra-ligamentary cyst. In another case the operator was forced to do a vaginal hysterectomy.

In ovarian cysts of moderate or large size the vaginal method is contra-indicated. Fehling is very severe in his condemnation of the operation after having resorted to it in seven cases. In cysts of smaller size—about two inches in diameter or less—vaginal section is at times preferable to the abdominal route. Even in such cases the operation is contra-indicated in cases of nulliparæ, on account of narrowness of the vagina. In most cases it will be necessary to first rupture or puncture the cyst and then, dragging the sac through the wound, ligate the base, usually removing the tube at the same time.

In certain cases of pyosalpinx or hydrosalpinx the entire mass can be removed. In some cases, however, owing to extensive adhesions; it will be wiser to merely incise the tumor and drain with gauze. It seems to me that in most cases a much neater and certainly more surgical approach will be from above. For when we consider the frequency with which such tumors are associated with adhesions to appendix, omentum and intestines we can readily understand how much more intelligently we can treat these complications through an abdominal than through a vaginal incision. Of course in those cases in which there is a free purulent collection in the pelvic cellular tissue, incision and drainage from below are to be preferred by far.

It is in cases of exploration of the pelvic contents that the vaginal method has its chief sphere of usefulness. How frequently do small adhesions cause suffering in women, and how often is it impossible to diagnosticate such bands without the finger in the peritoneal cavity! From cases with a few fibres passing between ovary and uterus we may meet others in which the adnexa are inextricably imbedded in firm adhesions. Separating such bands with the finger passed through the vaginal incision, loosening tube and ovary from adjacent structures as far as can be done with safety, amputating hopelessly diseased adnexa, and resorting to "conservative surgery" in cases which admit of such treatment, these seem to me at the present moment to constitute the legitimate scope of vaginal section.

In deciding between abdominal and vaginal section it is well to be guided by certain rules. A large vagina, tumors of medium or small size (particularly if freely movable or only partly bound down by adhesions), a uterus easily accessible—are favorable conditions for vaginal section. On the other hand, a narrow vagina with the uterus situated high up and perhaps fixed in adhesions, tumors of moderate or large size, the probability of a short ovarian ligament, the possibility of adhesions to and involvement of adjacent structures, are strong indications for preferring the abdominal route.

We cannot fairly close this paper without alluding to vaginal

hysterectomy in which, of course, both anterior and posterior colpotomy are required. We have been chiefly concerned with conditions in which it was intended not to remove the uterus. Still it must be remembered that exploratory colpotomy is sometimes first performed in order to determine the condition of the appendages; then, in case of bilateral disease, some operators proceed with vaginal hysterectomy. Again it must be borne in mind that any one undertaking to do a colpotomy must be ready, in case of uncontrollable hemorrhage or inability to carry out original plans, to supplement it with hysterectomy or laparotomy. So impressed have I become with this latter point, since I met a difficult case of inaccessible hemorrhage, that I only do vaginal section on condition that I am allowed the privilege of doing a possible laparotomy.

The legitimate scope of vaginal section may be summarized as follows:

1. For exploratory purposes. Examining the adnexa. Breaking up adhesions behind the uterus preparatory to fixation operations. Separating similar adhesions about the adnexa.

2. In cases in which simple oöphorectomy is indicated.

3. In cases of accessible fibroids of small size. Hysterectomy or morcellation can easily be supplemented when necessary.

4. In cases in which it is deemed desirable to shorten or attach the round ligaments beginning at their uterine insertions, or to do a vesico-uterine fixation (Mackenrodt).

5. In cases requiring incision and drainage for pelvic abscess, pus tube with adhesions, hydrosalpinx and pelvic hematocele.

6. In cystic condition of tubes and ovaries when of small size and not firmly bound down in adhesions.

7. In cases of chronic salpingo-oöphoritis with atrophied ovaries and thickened tubes.

8. In cases in which "conservative surgery" of the adnexa is desirable.

HYSTERECTOMY, WITH SUBSEQUENT HÆMORRHAGE CONTROLLED BY HYPODERMIC INJECTIONS OF ERGOTOL.*

By W. E. Ard, M.D., New York.

Mrs. H., a resident of this city, was referred to me by her family physician on March 20, 1896. The following history was secured:

Age, thirty-six; married eighteen years. Menses appeared in eleventh year, were regular, of three days' duration, normal in amount and without pain.

A miscarriage occurred in fourth month of pregnancy during the first year of married life, and one year later her only child was born. Labor was normal, but was followed by cystitis and suppuration of an inguinal gland.

Her mother died of carcinoma of the uterus in her fifty-sixth year.

The patient's symptoms at that time were as follows:

Dull pain in hypogastric region, constant headache, nausea, constipation and a constant bloody discharge from the vagina which had been uninterrupted since December, 1895. This discharge was at times scanty, but usually very free, and, as a consequence, she had lost much flesh and was very anæmic.

Being then in the Woman's Hospital and unable to care for her myself, I referred the case to a gynæcologist who made an examination under ether. He found a fibroid tumor about the size of a hickory-nut in the posterior wall near the vaginal junction, also a salpingitis on the right side. The uterus was curetted at this time. The condition was explained to her and hysterectomy advised, which she refused, and soon after returned to her home. The symptoms were not relieved to any extent beyond diminished flow for a few days. Later she was twice curetted by her family physician with no better results.

She was again sent to me early in February of this year. On examination the fibroid in the posterior wall was found to be slightly larger, and very plainly outlined. There was marked tenderness on the right side and all of the symptoms previously mentioned were intensified. An immediate hysterectomy was advised, which I did on February 4, assisted by Drs. Dunning and LeBarbier. The

* Read before the Woman's Hospital Society, March 9, 1897.

operation was done at the patient's home, under the usual antiseptic precautions. The vaginal method was selected, using ligatures on the uterine arteries, and clamping the ovarian. The ovaries being healthy were not disturbed. In removing the tube on the right side, the ovary was slightly torn, but there was no hæmorrhage from it at that time. The vagina was packed with sterilized gauze, and the patient put to bed in excellent condition.

Three hours later I was summoned and found the patient with a sub-normal temperature, a weak and rapid pulse, great pallor, extremities cold. Stimulants were used and hot applications made. A careful examination of clamps and ligatures revealed no hæmorrhage from those points, but the drainage being very free, and of a bright color, I recalled the tear in the ovary, and attributed the bleeding to it.

It was an exceedingly difficult question for me to decide whether to open the abdomen with the patient in a collapsed condition, or to try a less radical procedure. The latter was decided upon with most happy results. I administered ten minims of ergotol hypodermically, repeated it in a half-hour, and afterwards at intervals of two hours for ten hours. After the second injection the pulse showed marked improvement which was continuous. Under the previous use of stimulants alone the pulse would respond for a short time and then become weak and thready again.

The patient rallied nicely, and made an uneventful recovery, sitting up on the twelfth day.

The specimen, which you will have an opportunity of examining, shows a polypus attached to the fundus, and extending to the internal os. Also two small sub-peritoneal fibroids on the fundus, in addition to the one in the posterior wall, which was removed during the operation.

The points of special interest in the case are: First, the fact of the uterus being curetted three times without the discovery of the polypus, which I now believe to have been the cause of the hæmorrhage; second, the successful use of ergotol hypodermically for the control of hæmorrhage.

HYSTERECTOMY AFTER PREVIOUS REMOVAL OF THE UTERINE APPENDAGES, TOGETHER WITH REMARKS UPON THE SYMPTOMS DUE TO THE MENOPAUSE AFTER HYSTERECTOMY AND AFTER SALPINGO-OÖPHORECTOMY.*

By C. P. Noble, M.D., Philadelphia.

I have a very small list of cases as a basis of this paper, and the reason for that will appear in what I say later. I have operated on six cases for the removal of the uterus in which the uterine appendages had been previously removed. The first case was one which some years ago we called "chronic ovaritis," and that patient had a history of having had two attacks of peritonitis; but at the operation which I did myself there were no evidences of a previous peritonitis, but she had what we called cirrhotic ovaries in those days; that is, she had small, hard ovaries, which were removed. After the first operation she had suppression of urine, acute nephritis and was very ill, but recovered, and after the second operation, the hysterectomy, she had the same thing over again and recovered. I am quite sure that what was the matter with the woman all the time was that she had the arterial lesions which precede Bright's disease, and that she never had anything the matter with her ovaries.

The second patient is of the same class. I sewed up her cervix and perineum, and she had a painful left ovary which I advised her to leave alone; but, as the ovary continued to pain her, she consulted another doctor, who took out both ovaries, after which she continued to have the same pain she had before. She later came back to the dispensary connected with the Kensington Hospital for Women, and was treated by Dr. Parke for a year or more. In my opinion her case was similar to the first one; that is, all the trouble is in the blood vessels. As she complained bitterly of pain I took her uterus out. I was more inclined to do this because hernia had resulted from the first operation, and I had an opportunity to close this up at the same time that I removed the uterus. After the operation the urine was full of casts although previously normal. I

* Read before the Philadelphia Obstetrical Society, April 1, 1897.

took out the uterus and that did not relieve the pain. These two patients belonged to the same class. Neither one was at all relieved by removing the ovaries and neither one was at all relieved by removing the uterus.

I had two other cases in which cysts formed after removing the ovaries. The first had double ovarian tumors, which I removed in 1894. The cyst formed in left broad ligament, which I suppose was parovarian. In 1895 I cut into the cyst from the vagina, and drained with gauze, hoping the cyst would become obliterated. That is one of several cases I have treated that way. It never did any good. I had to remove the cyst in each case at a later date. We have all been taught that if you rupture a parovarian tumor the patient will get well. The first case of cyst formation was drained through the vagina, and later I removed a larger tumor and at the same time took out the uterus. In this case the uterus was removed as a matter of technique, as I could clean out the left broad ligament better. The operation was not undertaken to remove the uterus; that was incidental. The result in that case is she has a painful left broad ligament, but no further cyst formation.

In the other case of cyst formation I removed the ovaries and tubes in 1893. The delivery of the appendage was difficult because of dense adhesions, and the operation was one of those in which the ovary was not cleanly removed. The ovary split in pulling it up and no doubt some ovarian tissue was left in. In this case, also, a cyst formed on the left side, and a year later I operated to remove that cyst, but I found an abscess, and the adhesions were so dense that by the time I had the abscess cleaned out the patient's condition was so bad I was very glad to sew up the abdomen and leave the cyst alone. Subsequently I operated and removed the cyst, and she died from ether on the table. It was a clear case of death from ether. The respiration was good and the patient doing perfectly well, with a good pulse, when suddenly she stopped breathing, and it was impossible to resuscitate her.

There were two cases in which I operated because there were extensive intestinal adhesions. The first one was operated on the first time by Dr. Goodell, and I presume the condition of the ovaries was the so-called "chronic ovaritis" from what I learn. Her family physician sent her to me because she had a fixed delusion that something was tugging in one side of her abdomen, and he was under the impression that she would become insane if this idea were not removed. As the uterus was retroflexed and adherent it seemed not unlikely she had bowel adhesions. I opened the abdomen, separated adhesions and removed the uterus. And now she has the

same sensation as before. She is a monomaniac on the subject. In this case I did find adhesions.

The last case was operated upon first by another operator, and at the second operation I found a large uterus with extensive adhesions, partly bowel adhesions. The uterus was removed.

As to what has been accomplished: In the first class the operations did no good whatever; in the other two patients, one unfortunately died of ether and the result is not entirely satisfactory in the other. In the last two cases, in one the operation did no good whatever, and in the other I am inclined to think whatever good was accomplished was due to the fact that the bowel adhesions were separated.

In only three cases out of the entire number upon whom I have done double salpingo-oöphorectomy have I found it necessary to remove the uterus subsequently.

When hysterectomy was first advocated for double salpingo-oöphorectomy it was advocated on the ground that if the uterus were left behind when the ovaries and tubes were removed, especially in inflammatory troubles, the uterus would give rise to serious trouble to the patient. That was not my experience at the time, and has not been my experience subsequently. Out of all the cases I have operated upon myself there have been only three in which I have had any reason subsequently to remove the uterus after having first removed the ovaries and tubes. It was because of this general experience that at first I was opposed to hysterectomy as a substitute for the old bilateral operation. When the subject came up four years ago I investigated my old cases, and I could only find some three or four in which the uterus had given any trouble after the ovaries had been removed; and these were gonorrhœal cases in which there was suppurative endometritis.

For a number of years I have systematically done hysterectomy instead of removing the ovaries and tubes, but I have not been doing it for the reason that I felt if I left the uterus it would, *per se*, give rise to trouble. I removed the uterus along with the ovaries and tubes because I believed it to be a simpler and safer operation, and it enabled me to do without drainage; by taking out the uterus you control the blood supply better, the torn adhesions do not leak so much, and consequently you can do without drainage.

The next point which I wish to discuss is the question of the vaso-motor disturbances after total salpingo-oöphorectomy and after hysterectomy. I think there is no question whatever that the convalescence from hysterectomy is distinctly better than the convalescence from double oöphoro-salpingectomy. There are fewer complications and patients make better recoveries and are sooner

restored to health on the average. The reason is we do without drainage in hysterectomy, we have fewer infections from without, we have fewer infected pedicles. We have practically no ligature sinuses, which in the old operation, while not common, we did meet with in a definite percentage of them. In fact, I have not had a ligature sinus in a case of hysterectomy in which drainage was not used. I can recollect but one ligature sinus out of all the operations I have done in three or four years. That was a suppurating case in which hysterectomy was done and the pelvis drained with gauze.

On the other hand, as to the difference in the vaso-motor phenomena, I have been unable to observe it. It was claimed by those who advocated hysterectomy that the vaso-motor disturbances due to the menopause were much slighter in the hysterectomy cases than in the cases of double salpingo-oöphorectomy. Dr. Krug especially said that many of the symptoms were septic and due to absorption from the septic uterus. The only way to settle a question of this kind is to observe a large number of cases of double oöphorectomy or double salpingo-oöphorectomy and an equal number of cases of hysterectomy and carefully note the vaso-motor disturbances in each series. No one has ever done that, and therefore any statements upon the subject are mere inferences and opinions and are not scientific facts. I have not made these observations more accurately than other operators, but it has been my experience that the cases of most marked vaso-motor disturbances have been in my hysterectomy cases. At this time I have some six cases in which marked suffering due to the menopause is present. Of the six hysterectomies two were fibroid operations, two of them double ovarian tumor cases with such adhesions in pelvis that I removed uterus as well as ovaries, and two of them inflammatory. I have never had patients who have had more grave vaso-motor disturbances than these six, and if I should speak from my experience I would say that hysterectomy produced the gravest symptoms; but I am inclined to attribute these results to a coincidence. In my opinion they are purely accidental. I chanced to operate on a set of women who had a temperament to have these aggravated vaso-motor disturbances, and it was a mere coincidence that it was a hysterectomy and not a double salpingo-oöphorectomy. In other words, so far as my observation goes, it is an optimism to say that hysterectomy gives better results in this regard; and that, as a matter of fact, there is no lessening of the grave vaso-motor disturbances. I might say in closing, that I have not myself tried the method of leaving ovaries in when hysterectomy is performed. Of course it would not apply in an inflammatory case, because you seldom have an op-

portunity of finding an ovary healthy enough to leave in; but even in fibroid cases where you do have a healthy ovary I have not tried it.

Dr. Kelly has tried this extensively in the last year, and he has told me he has no doubt whatever that leaving the ovaries in has very greatly lessened and in many cases has done away absolutely with the vaso-motor disturbances which sometimes have followed in the train of a precipitated menopause.

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EDITORIAL.

A MEDICAL MINORITY SUPPORT OF THE HOSPITAL AND DISPENSARY ABUSE.

As we presaged in our editorials for March and April the honest, straight-forward and just determination of the long-suffering majority of the medical profession in this city and vicinity to put an end to the scandalous abuse of charity in medical institutions has met with equally determined opposition from a few influential members of our own profession, who seem willing to sacrifice every generous instinct for personal and selfish motives. The opposition so far has been even more open and shameless than we had feared. The cry of protest that has gone up from the whole profession of this country—North, South, East and West—has been a very real and a very earnest one, a just one and an unselfish one, as witness the many voices of those who, like ourselves, hold hospital and dispensary positions. It should not be necessary again to go over the old ground of offense against institutions which, under lay management and regardful only of their individual success as business enterprises, combine to rob the "laborer of his hire," to tempt to the loss of an honorable and independent spirit a large portion of the well-to-do in the community and to discourage and drive away the needy

poor, to render aid to whom is the only logical excuse for the existence of these institutions. The hospital and dispensary exist in the name of the *poor,* their demands upon the State and their appeals to the charity of the rich are made in the name of the *poor*; what canting hypocrisy, then, even if we apply no legal epithet, to divert the moneys so obtained from their lawful and specified end! Hospitals and dispensaries are eleemosynary institutions; they are that and that only. They are not corporations founded for their own benefit nor maintained, directly or indirectly, by the tax-payers because they are beautiful or attractive or conduce to the vanity of those connected with them. They are permitted to exist on their pretence of distributing *medical alms only to the poor.* What then is this great abuse which the majority of the medical profession mean to put down? It is that these institutions are *selling medical charity, for their own benefit, to all who will pay for it!* That they are inducing the rich and the well-to-do to support them by the bribe of personal free medical aid! Apart from its manifest immorality, it is a foolish excuse that such institutions can not live and support themselves without aid obtained in this fashion. Why, "they are condemned out of their own mouths"! Their end is not to support themselves but *the poor*; if they cannot do this but must crowd out the poor to make room for those who can pay, it is evidence that they are unnecessary, have failed of their end and should cease to exist. This is the logical sequence and the inexorable answer to such an argument.

But it is not so much the business corporations who control our hospitals and dispensaries with whom we have to deal at present. After all, they act "according to their lights." Moreover, they are utterly powerless to oppose this reform for one day before a determined and *united* profession. To our shame we must confess there are members of our own profession who, with the fear of losing their hospital and dispensary appointments before them, strenuously oppose all reform of an iniquitous abuse. They hope by appealling to the self-interest of many to frighten away the support of those whose instincts of honor and justice are still good, even where their courage is variable. And what excuses do these opponents of reform bring forward in defense of their opposition to a cause they dare not say is not essentially a good one? Their arguments are the immemorial sophristries always used in the effort to stifle generous impulses. They tell us that the evil is much exaggerated by the medical press; that in reality the undeserving patients who receive medical charity are few and the suffering of medical men deprived by our quasi-charitable institutions of their just fees is inconsider-

able. They come before us holding this tissue of excuses before their faces, but we read through the veil, stamped strongly upon their features, the true motive, *self-interest.*

We know no more pitiable sight than the position of the opponents of this reform. They have made themselves marked men; and it is a sad and an unwise thing to be marked in a bad cause, especially when that cause is the cause of the majority. It is sad because it is such a hopeless struggle, when justice and necessity go hand in hand; it is without even the consolation of a good conscience. It is unwise because with the majority, in the end, lies the power of retribution. No sane medical man in this community can doubt the fact that the cry for the need of reform is that of the majority and let no man doubt an equal fact that, in this struggle against injustice and self-interest, the majority will not fail. It is well for the opposing minority, which is now powerful, to heed the cry of the majority, ringing in their ears. It is now a cry for help; it may become a cry of execration.

The first battle has been fought. A few weeks ago a bill was passed through the Legislature of this State, which would have given a broad and fair relief to the abused dispensary system now in vogue. The opponents of reform had sufficient influence with the Governor to induce a refusal to sign the bill. But this seeming rebuff will later be turned into benefit to the Cause, for Governors are frequently made to change their minds and, when another bill is presented, it will, we doubt not, be broad enough in its scope to include the hospital system, as well as that of the dyspensary, and will be presented with such an endorsement from the profession in this State that the Chief Servant of the People will reconsider his unfortunate and ill-advised decision.

In the meantime, we can trust our medical societies and the medical press to bring to bear, in a concrete way, the force of public opinion upon those who continue to oppose the claims of their selfish interests to the good of the whole profession and dare to defy the will of a majority of their brethren in a just cause.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, April 1, 1897.

The *President*, E. E. Montgomery, M.D., in the Chair.

The Value of Quinine as an Oxytocic.

Dr. H. A. Hare made a report concerning a collective investigation which he had carried out among a considerable number of prominent obstetricians as to the actual value of quinine as an oxytocic. It was evident from this report that the drug has no direct influence upon the uterus, but greatly increases its power of contraction by supporting the nervous system and supporting the general strength of the patient. It was shown that the drug is incapable of originating uterine contractions and various explanations of the fact that abortions have occurred while quinine was administered were presented. The conclusions reached from the replies of the various obstetricians to whom the questions had been directed indicated that quinine was by no means as popular a remedy for uterine inertia as it was some years ago. One or two observers reported not only that the patients were annoyed by the ordinary symptoms of chinchonism but, in addition, that in their opinion quinine distinctly increased the tendency to post-partum hæmorrhage. A number of cases from literature were cited, seeming to support this view.

Finally, the results of the report indicated that the drug should be given in full doses in such a form as to be quickly absorbed.

Discussion.

Dr. Rosenthal: It is only those who practice midwifery, those whom we term the "practical physician," who at the bedside of their patients look for such means that assists their work, that are competent to judge whether quinine is an oxytocic or not. I think that for probably ten years I have used quinine in that sense, and with most gratifying results. Not only for that purpose, but I have used it also to prevent the post-partum hæmorrhage, which it appears others have seen produced by it. I have never seen post-partum hæmorrhage result from its use. My prescription has been for this

purpose alone, quinine 2 grains, combined with 1-8 grain of morphia, repeated once in two hours.

By uterine inertia, I mean those cases in which the uterus was dilated or dilatable and where for any cause the pains cease labor stops and there are no indications that a termination will be soon without some assistance; those cases that in fact could very easily be terminated by the use of the forceps; where for many reasons this cannot be done, and where we can bring on a continuance of the labor by appropriate remedies. Here quinine is the remedy.

I think quinine is perfectly inert to bring on abortion in a healthy woman. Those cases in which quinine produced miscarriages reminds me of a case I saw some fifteen years ago in the practice of Dr. De Young. We treated the case for malaria, in which we gave ten grains of quinine. The result was a miscarriage. But I do not believe the quinine was the causative factor. I believe the miscarriage ensued in the same manner that it does when a patient has typhoid fever or pneumonia. I lately had a case of this description. A woman suffering from typhoid fever, treated by the wet pack and suitable remedies, was given during convalescence two-grain doses of quinine four times a day. I did not know she was pregnant, but the result was a miscarriage. I am more inclined to the belief that it was the result of the fever than of the quinine.

Now, if you take the case of a woman who is suffering from a hæmorrhage more or less for a month, who has been pregnant six or ten weeks, and the hæmorrhage is constant, some days a greater flow, other days less; if you give quinine to such a case as this, you bring the state of things to a focus and if she is going to have a miscarriage, you can rapidly produce it, and terminate by the use of quinine. I have seen these cases again and again.

Take what we term suppression, this suppression may be produced by exposure to cold—for such cases do exist. The hæmorrhage starts in but it does not continue, she has violent pains but does not have any flow. If you give a dose of quinine you also produce a natural hæmorrhage; this is the only hæmorrhage I have seen produced by quinine. I give ten-grain doses of quinine and expect to have results in such cases or in cases of labor. In those cases in which I think there is an impending miscarriage, in which there is an elevation of temperature with a hæmorrhage; whether the result of a fever or from any cause, where the uterine bleeding is constant and has been going on for a certain time, I give quinine in two-grain doses every two hours, combined with one-eighth grain of morphia, and invariably find the trouble is brought to an end.

Dr. G. M. Boyd: I enjoyed Dr. Hare's report very much, and

was rather glad to hear that Dr. Albert H. Smith approved of the use of quinine, from the fact that it may be possible that my fondness for the use of that drug during labor has been due to the fact that I have had an opportunity of working in an institution that he was at one time connected with. I have great faith in quinine during labor and use it as a general tonic. I do not feel that uterine inertia exists in the vast number of cases. I think a great many of our so-called cases of uterine inertia are cases in which there is some mechanical difficulty existing. I have used quinine in place of ergot, using it in small doses where labor was prolonged and following its use during the puerperium in small doses for its tonic effect. using it very frequently where others might have felt that ergot was indicated. In fact, I have done away with the use of ergot entirely and as its substitute I have used quinine, and feel myself that the ergot is only indicated in the non-puerperal uterus. I believe that the effect of quinine is a general one, and it is one of the best tonics.

Dr. Anna Fullerton: We have used quinine considerably in the Maternity Department of the Woman's Hospital, chiefly through the instigation of Dr. A. H. Smith, who was one of our consulting physicians for many years. Very often in cases in which we desired to induce premature delivery we tested its efficiency in the production of uterine contraction, and the dosage was fifteen grains, given in five-grain doses every half hour or hour until the fifteen grains had been given.

So far as my own observation went, I think its effect in the production of contractions of the uterus is rather unreliable. At times it seemed to excite contraction, again it seemed to be utterly unavailing, so that I should not think that its immediate effect on the uterus was its chief value. We have found it occasionally as a tonic of decided advantage to the patient in labor who seemed exhausted. So far as it resulted in the production of hemorrhage, I do not think I have observed any more tendency to hæmorrhage in cases in which it had been used than in those in which it had not.

Dr. J. M. Baldy: It is some time since I practised obstetrics actively. When I did, however, I had little faith in quinine in uterine inertia. I believe it is an absolutely worthless drug. It throws so much additional on a stomach which is already irritated and does a great deal of harm. I fully appreciate that it is used very largely in practice, and used as very many other drugs are—because it has been handed down as an heirloom from the past.

I have yet to see the first case in my life in which quinine has had any effect in increasing uterine pains after they have been established or in originating pains.

Dr. George I. McKelway: When Dr. Hare read the reports from the gentlemen to whom he had written one thing impressed me, and that was that the men who had used small doses, not exceeding ten or fifteen grains, reported against the use of quinine, and the men who had used larger doses, from twenty to forty grains, reported in favor of its use. I have used it a great deal. I have found that when it is given in large doses and retained in cases of inertia uteri it does help and help materially. There is the disadvantage of nausea and there is the sequence of vomiting very often. Of course in cases in which it is vomited it is useless. The disadvantage of the chinchonism is comparatively a trifling one and not to be considered other than as an annoyance. I have never seen postpartum hæmorrhage or any excessive flow of blood which could be traced to its administration following its use. One or two gentlemen spoke of the use of kola and antipyrin, and Dr. Hare remarked upon the improbability of our obtaining results in inertia uteri from nervous sedatives. I believe the good effect obtained from these drugs was not in cases of inertia but in cases of rigid cervix, as it is very often found in the labors of primparæ. Nausea and vomiting or nervous sedatives will relieve this condition but increase our difficulties in inertia uteri.

Dr. Palmer and Dr. Edgar wrote of the use of strychnia: Some years ago Dr. Montgomery suggested to me the hypodermic use of strychnia in such cases, and I have used it and used it in appreciable doses; 1-20 of a grain, possibly repeated once, twice or three times if need be during the course of labor, and have found excellent results from it. I would not expect to obtain appreciable effects from an inappreciable dose of either quinine or strychnia.

Dr. John C. DaCosta: It is surprising what different results different men get from the same drug. I have gotten capital results from quinine in inertia. It was much used some fifteen years or eighteen years ago at the Lying-In Charity, owing probably to the teaching of Dr. Albert H. Smith. I have never seen any hæmorrhage following it, and do not remember to have seen any bad results. I have given it to pregnant women before labor without fear. I have given it in the inertia of labor in the second stage, or rather after the os was widely expanded and the uterus stopped work; in those cases in which sometimes we would not have an expulsive pain for an hour or two. Our mode of using it was not to use quinine alone, but to give five grains of quinine with one-fourth grain of opium and repeat in one to two hours, and it was rarely we had to give two doses. A uterus may have lain idle for one or two hours, sometimes with not more than one or two pains in twelve

hours, but after the second dose we generally had the baby in the bed inside of an hour.

Next, as to its effect in producing abortion, I have given quinine to women in pretty massive doses without producing abortion. I remember a case ten years ago of typhoid fever in a pregnant woman where there had been profuse intestinal hæmorrhage, the woman got over the typhoid fever and an intermittent fever set in, with variations of temperature running from 96° or 97° to 104° and 105°; twice in twenty-four hours that woman got sixty grains of quinine for several days, then fifty, then forty. She went on to full term (she was about four and one-half months pregnant when I began with quinine) and was delivered of twins at her full time.

It is possible the way in which I gave quinine may have had something to do with it, the opium may have had something to do with it. Whether the action was local or general I cannot say; certain it is the effects were very good.

In regard to the vomiting that Dr. McKelway speaks of. In his cases it may have been that the quinia did good by producing vomiting. One of our means when the placenta was retained was to make the woman put her finger down her throat so as to produce nausea and vomiting, and we were pretty sure the placenta would be expelled.

Dr. R. C. Norris: Before the subject is closed I should like to say a few words, although I did not have the pleasure of hearing Dr. Hare's report and do not know just what he said. I would like to offer my experience for what it is worth. I used quinine pretty thoroughly for a time, and finally concluded it had practically no value as a stimulant and that it had no marked specific action upon the uterus, and therefore have given it up. I have not used it for some time. I found frequently that it would produce nausea, and in one or two cases giving it in doses in which I employed it ten or fifteen grains and repeating that dose in an hour, the patients were made deaf for a few hours. I have never seen any ill effect except a temporary deafness and nausea and vomiting. It practically in my experience has no value as an oxytocic to be administered for uterine inertia. I can scarcely understand how Dr. DaCosta would expect to give quinine with the belief that it was an oxytocic and at the same time opium, which is believed to have just the opposite effect. The administration of opium to a woman who is tired out and exhausted from pain will frequently produce sleep, and the patient will thereafter awaken and her uterus having had that amount of rest will contract with renewed energy. The administration of drugs during labor, in my experience, has been of very little value.

I don't know whether Dr. Hare has said anything about the use of kola, but some time since he sent me some with a request that I employ it. On the whole, it has had a rather favorable effect, I think. In multiparæ, with the os widely dilated and the pains lagging, I think the most efficient means is puncture of the amniotic sac. Following the discharge of the liquor amnii the uterus will respond almost at once, and firm, vigorous uterine contractions will follow. So far as the use of drugs is concerned, in my experience, I have found most benefit to come from the administration of some general stimulant, such as a glass of whiskey and water, or of sherry, which I have had occasion to advise in some of my better class of patients and those measures seemed to revive and invigorate them, and after a few minutes' rest the pains improved. I wish we had some drug always efficient in uterine inertia. Such a drug would certainly help us out in some of our slow and tedious cases.

Dr. H. A. Hare: It occurs to me that one of the reasons why such varying results may arise in the administration of quinine in parturient women lies in the fact that one woman's stomach may absorb quite rapidly and another woman's stomach not at all. We must remember when a drug is given by the mouth that it will probably take an hour to absorb it and for it to exercise its full physiological action. In a certain number of labors, when a woman's uterus becomes quiescent from inertia or otherwise and she lies still for an hour the pains would usually return at the end of that time if she took no drugs. If quinine were given then the physician might readily think that the quinine brought the pains back again. When physicians find no result at all until some time has elapsed, the women probably have atonic or catarrhal stomachs and quinine is very slowly absorbed.

Dr. Norris referred to the use of kola. My attention was called to the possible value of this drug by Dr. Gundrum, of California, about six months ago, and early in the winter I asked Parke, Davis & Company if they would provide me with a considerable quantity, which they did. I sent this supply to various dispensaries, to the Jefferson Maternity, under Dr. Davis; University, under Dr. Hirst; Dr. Norris at the Preston Retreat, and also some to Dr. Duer. I have not received a report as yet from Dr. Duer. It is interesting that the reports which I shall publish shortly are all very favorable indeed to the influence of kola in cases of uterine inertia, and reports indicate that it has given very distinct results. These results from the use of kola are apparently so definite, come on so soon after the drug is taken, pains are revived by it so remarkably that it would appear probable that Dr. Gundrum's original observation as to

kola's oxytocic powers is correct, and that in kola we have a very much better stimulant for bringing on pains and overcoming inertia than quinine.

I do not believe myself that quinine has any oxytocic influence that is direct. I believe it is simply a general tonic to the system in the same way that a man who needs a stimulant and takes quinine is better than if he had not taken it. So the parturient female, taking large or small doses, may get a systemic influence. The only way in which kola can be supposed to act is because of the large quantity of caffeine and kolanine it contains; it whips up the flagging nervous system and causes the cells in the spinal cord and the reflex functions to be increased. In this way there is increased uterine activity.

Hysterectomy after Previous Removal of the Uterine Appendages, together with Remarks upon the Symptoms Due to the Menopause after Hysterectomy and after Salpingo-Oöphorectomy.

By Charles P. Noble, M.D.

(See page 685.)

Discussion.

Dr. J. M. Baldy: I am a little at a loss to know how to discuss this subject. I have had occasion to look very closely into this whole question of the result of the operation of hysterectomy as compared with ovariotomy, for the reason that some months since, probably a year, I ran across in the literature the statement by one of my assistants in one of my clinics that the menopause following hysterectomy was emphatically and decidedly worse, more severe and more prolonged than that following ovariotomy, and of course he based his results on observations on my own and colleagues' cases.

I am free to confess I was considerably astonished, and have since made very close observation, and I believe this statement to be entirely untrue. I see no difference in menopause following hysterectomy and that from ovariotomy. I cannot convince myself that on either one side or other there is any great difference.

The question of leaving ovaries has been agitated for a considerable length of time to do away with the symptoms of the menopause. It seems to me we are taking risks in leaving ovaries, giv-

ing the woman risks for the future far in excess of any harm that may be caused possibly from the slight increase in the menopause symptoms.

We are certainly risking a great deal for the woman's future in leaving ovaries for the sake of getting rid of a number of symptoms which are of minor degree. The uterus has been removed for some reason, that reason is probably some organic irritative disease, fibroid tumors or something of that kind. The disease which originates fibroid tumor originates a great deal of ovarian disease. As a matter of fact, fibroid tumors are nearly always accompanied by tubal or ovarian disease or both. Now when we leave the tubes and ovaries we are risking the future of that patient by the development of the disease in these organs. One should hesitate a long while, and I shall wait to see the result of work of colleagues before I will submit my patients to any such risks.

As far as the easier convalescence is concerned, following hysterectomy this is undoubtedly true. Any one who has practiced the two methods of hysterectomy or ovariotomy will concede that without any hesitation whatever, the convalescence is infinitely easier following hysterectomy, I mean immediate convalescence from operation.

As to the question of removing the uterus subsequently to having done double ovariotomy: Dr. Noble has spoken of those cases in which he has removed the uterus, and if I were to picture a class of cases in which to do that operation, systematise them in classes, the class he has pictured is the one I would exclude from the operation. Of all of the symptoms which you cannot relieve by this procedure, the most marked is pain. The pain that is left following the original operation, without a great deal of disease being left on which you can place your fingers, cannot be cured by the subsequent hysterectomy as a rule. Originally the case was one in which you have made a mistake and operated on a patient that you had better have left alone. The pain they have after operation shows it has been a mistake in judgment, and if not operated on at all they would have been no worse off. They would have been better off not to have had symptoms of menopause on top of their other symptoms. This class (almost all of whom are neurotic), if you add the symptom of the menopause, you make them infinitely more miserable women for the time being.

There is no question whatever that there are a certain run of symptoms which follow double ovariotomy which would not have followed in a certain proportion of cases had the uterus been removed. That run of symptoms—leucorrhœal, irregular discharge, pro-

fuse, abnormal menstrual flow, bloody flows, weight and dragging in the pelvis. My experience has been that this is the principal run of cases in which I have had trouble; this is the class of symptoms which I have been able to relieve by removal of uterus subsequently.

A great deal better judgment is being used in regard to the original operation, and the benefit of the doubt, if it is a doubtful case, is given to the woman and a hysterectomy is being done to-day. Personally, in my own practice, I would expect very few or none to come back for a second operation if the first failed to relieve. So it is not a matter of surprise to-day that we are not having very many of these cases; it is not a matter of surprise that Dr. Noble is not seeing many of them at this present time—they go to other men for a second operation.

Dr. C. P. Noble: I wish to emphasize one point referred to in the paper concerning the original argument as to why hysterectomy should be substituted for double salpingo-oöphorectomy. It was claimed, especially by Dr. Krug, that the uterus was septic, and that many of the climacteric symptoms that the women have are septic symptoms; that they have a mild septicæmia from the diseased uterus. This I do not believe at all. I think, also, that this old argument was not borne out by the fact that those cases in which the uterus was left in do not come back either to Dr. Baldy or to myself to have uterus taken out. If the uterus was really going to give trouble by leaving it in, a great many of these cases, and there were hundreds of them around town, would have turned up subsequently to have their uterus taken out. I am heartily in favor of hysterectomy instead of double salpingo-oöphorectomy. It is safer, and gives a better convalescence with fewer complications, but I do not advocate taking uterus out on the ground that if left behind, after recovery from the operation it would give trouble, *per se.*

The only other point I wish to mention is as to what Dr. Baldy said about fibroids and complications of diseased appendages. I have mentioned a number of times that my experience on this point differs from his. I have found a relatively small percentage of cases in fibroid cases, of disease of the appendages. I should think fifteen per cent. of the cases would be a large statement in which there was serious disease, and in hospital work we must remember a considerable percentage of the cases have been subjected to the possibility of gonorrhœal disease, and do not indicate any connection between the fibroids themselves and the disease in appendages. I have not as yet adopted the practice of leaving the ovaries when performing abdominal hysterectomy. I remember very well some of the vaginal hysterectomies which I did some years ago in which the ovaries were

left in; there were only two or three of them; they did not have any special trouble with menopause symptoms. If it does prove to be a fact that leaving ovaries in obviates the sometimes distressing symptoms of the menopause, they can be left in whenever healthy.

A Case of Retention of Urine Simulating Pregnancy at Term.

By George M. Boyd, M.D.

(See page 653.)

Discussion.

Dr. John C. Da Costa: I saw a case similar to that of Dr. Boyd, but the case was not brought to me for pregnancy. Some years ago, when we were holding those long spring terms in the Jefferson Hospital, a woman was brought to me from up country to operate upon for large ovarian tumor. I took her into the clinic room and made a diagnosis between ovarian tumor, ascites and enlarged bladder, and after making diagnosis instructed the assistant to put a catheter in her bladder. He drew off a large china basin full of urine, and the tumor disappeared. The case of Dr. Boyd seems very like those lectured upon by the elder Gross as "cases of incontinence of retention."

Official Transactions.

Frank W. Talley, *Secretary.*

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, March 2, 1897.

The *President*, Robert A. Murray, M.D., in the Chair.

Recurrent Pelvic Inflammation, with Specimens.

Dr. Boldt presented a uterus and annexa which had been removed from a patient giving the following history: Emilie B.; age, thirty-eight; married twenty years; never pregnant. Menstruation began at seventeen. During the past ten years the patient had been unable to attend to her customary household duties on account of pain in the lower part of lumbar and sacral regions, in the lower abdomen and both ovarian regions; headache, nausea and vomiting. Menstruation is at regular intervals but very profuse, lasting from four to five days. As seen by the specimen the uterus is half again its normal size; the ovaries are two and a half times their normal size, the fallopian tubes curled around them and intimately adherent to them, their calibre also being double the normal size. The annexa were firmly adherent in the pelvis and the uterus itself only moderately mobile on account of chronic pelveo-peritonitis, so that the operation proved to be an unusually difficult one for this class of cases. The microscopical examination of the specimen showed benign adenoma of the uterine mucosa. The fallopian tubes in a state of interstitial inflammation, and the ovaries consisted principally of fibrous connective tissue, very little normal ovarian tissue being left.

Discussion.

The President: Some very important points come up in connection with such a case. What can medical treatment do for these cases, and when are we justified in operating on them? Should we operate on them, as a great many operators believe, as soon as we find there are adhesions, or wait and see whether the adhesions will be absorbed? I think the importance of the specimen is much greater than that of a rare specimen, because it occurs more frequently.

Dr. Malcolm McLean: It seems to me that such a specimen

as this would be much more valuable if we had an accurate clinical history of the case. The value of the operation, or even the question of its being justified, would certainly be decided in my mind entirely by the history of the patient. It is one thing to say that local treatment is utterly useless; it is another thing to prove this by a proper local or general treatment. Those of us who have been practising a long time have learned to observe that patients do get well of very frightful inflammations about the pelvic organs, and are in better condition than many of the patients where total extirpations are done. While I do not make any comment, except in general, in connection with this case, I would ask that a very thorough history of the patient's symptoms be given, whether she were invalided in such a way that no treatment could accomplish any good whatever, or whether this was done simply because it was a convenient thing to do to remove the offending organs. I have seen the uterus and ovaries in quite as bad a condition as presented here get entirely well so far as external observation of the case can go. I am afraid that the accusation recently given in one of our medical journals is a very just one, that gynæcologists are losing their hold on gynæcology by becoming purely surgeons, and that they are losing track of the fact that women may be cured with their organs left *in situ*, and are falling to the level of extirpating the offending organ on too small grounds.

Dr. H. C. Coe: Dr. McLean expresses my views on this subject. The impetus given to hysterectomy for diseased annexa by our French visitors has been spent and we are now leaning to the conservative side. I do not, of course, refer to this specimen, when I say that we certainly do see patients with disease of the ovaries and tubes and extensive exudates, who make good recoveries, anatomical as well as symptomatic. The doctor has alluded to a recent editorial in which I expressed the opinion that gynæcologists are getting to be too surgical; that if we are to hold our place with the general surgeons we must do it by greater exactness in diagnosis and a stronger leaning towards conservatism. Patients themselves are beginning to rebel against radical operations, and seek for less serious means of cure. They do not so much object to one ovary or tube being removed, but they do not want both ovaries and uterus taken away. Not long ago I had an illustration of the fact that they are right. A lady under my care a year ago had been told that her ovaries and tubes were hopelessly diseased, and that there was no cure except by extirpating them. She became pregnant two months after that, not as the result of treatment, for I saw her only half a dozen times. It was

simply from the fact that she did not have any extensive disease. She had a normal pregnancy and labor.

Dr. H. N. Vineberg: I think so much depends on the history of these cases that we cannot discuss them without a full and accurate history. It would make a great deal of difference whether the woman was forty years of age, or only thirty, and as to the nature of the treatment that had been carried out. I think a great difference must be made, also, between acute troubles and chronic affection. In my own experience, I have seen quite a number of acute cases in which it seemed to me that it could not be cured, and yet it was. On the other hand, the chronic cases are the ones in which, even after radical operation, the benefit is very limited. These women go on complaining of the backache and the pains and the ailments they had before operation. It seems to me that what we have yet to learn is how to relieve these women; whether it be by operation or not, we shall have to learn some good method.

Dr. Ralph Waldo: I do not want to criticise anybody's work, and do not know who presented this specimen, but I would like to say, in view of the fact that so many of us are seeing cases of a very disagreeable variety of vaginitis coming to us after hysterectomy—varieties that I think tax all of our ingenuity to the utmost, and then frequently we do not cure the patient—and in view of another very important surgical principle that I think it is well to bear in mind, namely, that you should not remove an organ unless you have every reason to believe that the organ is diseased beyond repair, and further than that, that the disease is of a nature that will render the patient either an invalid or put her in danger of her life. I think that in view of those facts, the uterus should be left in as often as possible. I know that there was a time when I liked to take them out more than I do now; but where I have quite extensively diseased tubes and ovaries, if I can get those organs away—and I usually can from above—and leave the uterus, I do so. I admit that in one instance it was necessary for me to go back after the uterus, on account of persistent symptoms nearly two years afterwards. I am glad to hear the sentiments expressed here to-night in favor of conservatism. By that I do not mean no surgery. I think unquestionably a set of ovaries such as these ought to come out, but I would question as to the uterus.

The President: I am glad to see, as an obstetrician, that conservatism is coming back, and I am sorry that so many gynæcologists have divorced themselves from the practice of obstetrics. There would be less radical work done if they could see in their practice of obstetrics many of these cases of chronic adhesions, with oöphoritis;

the patients treated by curetting, the leucorrhœal discharge controlled, the uterus given rest, and the congestion of the uterus thereby relieved, afterwards those patients become pregnant, and after the pregnancy, the whole of the exudation disappears, the patient becoming perfectly well; having gone through the confinement without any serious trouble. Some years ago, I reported some cases on the subject, but I have had during the last three months three cases similar to the one Dr. Coe spoke of, and each of those patients was told she could never have a child, yet I confined them, and they did not have the slightest rise of temperature. They are absolutely free from all symptoms. And then you can take the contrary position, which Dr. Vineberg has spoken of, that even if you do take out their tubes and ovaries, you cannot promise that the patient will be relieved from pain. But there is another point which has been impressed on me by three cases during the last five months. Each one of the three has been operated on. All of them are well, but each of them is separated from their husband, has a separate income, a separate house, but is not a married woman to-day. Is there not a moral obligation on us as surgeons to take care of what we do? We ought to consider, in doing an operation whether we are going to make the patient better, and whether it is absolutely indispensable. Can we not get the uterus and annexa so well that the patient will be well enough to have a child? You know how frequently that has been the result of dilatation of the cervix and curettement of the uterus.

Dr. WALDO: I would like to say that for the past three years, in all the cases excepting where there is an accumulation of pus, that can easily be made out, or some similar condition where the patient has evidently had a good deal of endometritis and where there has been a good deal of enlargement of the tubes or of the ovaries it has been my habit to tell those patients that I would attempt to cure them by means of a very simple operation, and if that did not succeed, afterwards could perform a more grave one, and that simple operation has consisted in dilating the cervix and thoroughly curetting. Now, by that procedure, I have had seventy-five per cent. of these cases dilated and curetted, and cured as far as their symptoms were concerned, at least cured sufficiently not to go on to laparotomy. The other twenty-five per cent. afterwards required abdominal section. I was much interested in the remarks of the President, and glad to hear what he said about these patients getting well. I remember one case where we had all the instruments ready, and the woman laid in the hospital between six and seven months, and went out with instructions to come back. She

came back to have a tube removed, and I could not find it so no operation was performed. In a little less than a year from that time she came to us to be admitted as a maternity case.

Dr. VINEBERG: We must not lose sight of the fact that pregnancy is not an indication that the woman is cured, and that it may be a most serious thing for the woman to become pregnant. I know the case that the doctor has just referred to and she is not a well woman.

The PRESIDENT: I do not wish to be understood as saying that, because the patient becomes pregnant, she is cured of the uterine trouble. I say it very frequently results in cure.

Fibromyoma of the Ovary: Operation; Recovery.

Dr. H. C. COE presented specimens, with the following report: Mrs. H., age thirty-seven, married eighteen years, but never pregnant. Menstruation regular, with moderate flow, but little pain until two years ago, since which time it has been quite profuse. Four years ago she noticed a movable tumor the size of a cocoa-nut on the right side of the abdomen, which has grown rapidly during the past year. During the past six weeks the abdomen has increased in size and œdema of the lower limbs has been marked. Considerable abdominal tenderness of late, with loss of strength and emaciation. Thoracic and abdominal viscera normal.

Examination shows a solid neoplasm filling the lower half of the abdomen, and apparently median in situation. Well-marked ascites. The tumor is fixed, and seems to spring from the uterus, which is drawn upward so that the cervix can barely be touched.

Diagnosis, uterine fibromyoma. The patient was admitted to the Cancer Hospital August 16, 1896, and abdominal section was performed the following day. On opening the abdomen several quarts of clear ascitic fluid were evacuated. On account of the size of the tumor it was necessary to enlarge the incision two inches above the umbilicus. The growth was universally adherent, especially to the uterus, which lay below and in front of it. The vascular supply was unusually rich, necessitating the ligation of numerous large vessels. After separating the adhesions the tumor was found to spring from the right ovary. The left ovary was enlarged to several times its normal size, and on its exterior was a pedunculated fibrous growth as large as a marble. The uterus was small and was not removed. The torn broad ligament and extensive raw surfaces were sutured with catgut. Time of operation one hour. Wound closed with three tiers of chromicized gut. Conva-

lescence normal. Primary union. Patient discharged September 7. (A letter received March 5, 1897, states that the patient has gained fifty pounds and is in perfect health.)

On account of the rapid growth of the tumor (which weighed eighteen pounds) and development of ascites it was inferred that it was a fibrosarcoma, and an unfavorable prognosis was given, especially as the left ovary seemed to be undergoing a similar change. But the pathologist reported that it was a pure fibromyoma. The interesting point in the case is the difficulty of distinguishing such solid tumors of the ovary from uterine fibroids. The frequent appearance of ascites in connection with the former's growth, even when of small size, is well known and has never been satisfactorily explained. It may be regarded as an important element in the differential diagnosis. In this case, however, this feature was only noted a few weeks before operation. Fibromyomata of the ovary are quite rare, according to Bland Sutton.

Adenomatous Fibroma.

Dr. Boldt: B. M., age twenty-eight, single and a virgin, first came under my observation on November 18, 1896. She had then been bleeding profusely for five months, in consequence of which she was very much run down physically, greatly emaciated and exceedingly anæmic. All manner of treatment which she had undergone had no effect on the hæmorrhage.

Three days subsequently I curetted her very thoroughly, but did not find any thickened endometrium; on the contrary, the curette brought none away. The small solid ovarian tumor which I felt to the right of the uterus, and which I diagnosed to be a small dermoid cystoma, I did not believe to be the causative factor in the production of the unusually profuse bleeding, and I did not care to do an operation for the removal of it at the time, because of the patient's anæmic condition, and also because there was not the slightest pain or inconvenience from it. The absence of pain was against the diagnosis of the tumor being of dermoid character, yet occasionally, when there is no concomitant perimetritis, pain is absent in this variety of tumors, and such I thought was the case in this instance; hence the diagnosis.

There was no cessation of the bleeding, despite of anything used to check it; on the contrary, if anything it was more profuse.

On January 7, therefore, after careful deliberation of the circumstances, I did a vaginal hysterectomy, the recovery from which was uneventful.

Macroscopically, the interesting features are that the endometrium is almost entirely absent, showing that no regeneration of it has taken place after the curetting, but more important is the fact that I could not procure any by the vigorous use of the instrument, when I applied it, showing that it had not regenerated since its use six months previously. The tumor has the macroscopical appearance of a fibroid. I move that the specimen be transmitted to Dr. Freeborn for careful examination, and that the case is not reported until we receive his report.

Report of Pathologist.

The specimen consists of a uterus, with ovaries and tubes attached, and an irregular-shaped tumor.

Uterus.—Measures 8 cms. in length, 4 cms. across the fundus. Its cavity has been laid open from the anterior surface. The surface of the cavity of the body is smooth, and there is no appearance of a mucous membrane. The cavity of the cervix is roughened.

Tumor.—Irregular in shape, measuring 4½ by 4 by 3 cms. It has a few thin adhesions scattered over the surface. Section shows the tumor to be rather soft, white in color, and irregularly mottled with yellow spots.

Left Ovary and Tube.—Ovary small and rugged. Tube tortuous; 6 mm. in largest diameter. Fimbriated end open. Adhesions over entire surface.

Right Ovary and Tube.—Ovary cyst about 33 mm. in diameter; walls thin. Tube, 6½ cms. long and 7 mm. in largest diameter. Fimbriated end open.

Microscopical Examination.

Uterus.—Cavity of body lined with a layer of tissue resembling granulation tissue, but poor in blood vessels. Cavity of the cervix has mucous membrane in place, and it shows a chronic inflammation, with slight dilitation of the glands.

The muscular tissue of the organ appears normal.

Left Ovary.—Chronic ovaritis.

Left Tube.—Chronic salpingitis and perisalpingitis.

Right Ovary.—Cyst lined with single layer of rather flattened epithelium. Walls still show ovarian tissue.

Right Tube.—Chronic salpingitis and perisalpingitis.

Tumor.—Adenomatous fibroma.

G. C. Freeborn, *Pathologist.*

Discussion.

Dr. Vineberg: Some writers have denied the existence of a myoma of the ovary, but within the last year or two, an operator has reported a case, in which he has shown that the hilum of the ovary contained muscle tissue, and in that case of course we can have a fibromyoma of the ovary, as well as of the uterus. The case is exceedingly interesting from that standpoint.

Dr. McLean: I only wish to confirm Dr. Coe's remark as to the presence of ascites in these cases. It has been my experience that, when I opened the abdomen for supposed fibroid of the uterus and found a considerable quantity of fluid, I knew I was going to find something different or unusual.

The Sterilization of Catgut after Hofmeister's Method.

By Hiram N. Vineberg, M.D.

(See page 660.)

Discussion.

Dr. Waldo: I think the 1-1000 bichloride has a good deal to do with it, and I can say that for two years back, I have been preparing catgut by making 1-2000 bichloride of mercury in ether and puting ordinary commercial catgut in it, and we have no suppuration.

Dr. Von Ramdohr: Catgut is supposed to stand an ordinary strain, and this specimen does not stand such a strain. I have torn it twice, once with Dr. Grandin and once by myself, and if its chief recommendation is its invulnerability to physical force, it is worthless.

Lacerations of the Cervix Uteri.

By G. W. Jarman, M.D.

(See page 656.)

Discussion.

Dr. Von Ramdohr: I was very much interested in the paper about the causation and treatment of lacerations, but I have to take issue with the doctor when he tells us to do a few things which we are unable to do, in private or other practice. The first thing is in putting us into the same position as to lacerations of the perinæum

and lacerations of the cervix. We cannot prevent lacerations of the perinæum. There are about twenty-five methods of preventing it, and as long as there are twenty-five methods of doing a thing, none of them is good. As far as lacerations of the cervix are concerned, they occur at a time when we neither see nor feel the edge any more. The laceration does occur bilaterally a great deal more frequently than antero-posteriorly. Should the anterior lip be caught behind the symphysis thereby occasioning a dystocia, such condition will be recognized, the lip pushed up, and incidentally a laceration may be prevented. Otherwise I would not take the risk of trying to prevent a laceration. It is next to impossible to inform us of the chance of a laceration unless we examine every half hour or more frequently, and that would be meddlesome midwifery. Supposing, however, a laceration has occurred, how do we know it has occurred? It would mean, under such circumstances that we would have to examine each and every case post-partum. There is not an obstetrician in this room who will contend that every case that has been confined should be examined in this way. That certainly would be considered meddlesome midwifery. But, supposing that we do such a thing, the author of the paper says it does not require any assistants, except one, and yet the Doctor uses a double tenaculum. Now, if you need a double tenaculum to get the two sides together, and do some sewing, you need a few other people there, for instance, one to hold the light at night. Sewing up a lacerated cervix is an easy thing in the lying-in asylum, with a number of assistants but, if I were a country physician, and not have a requisite number of assistants, I would not try to repair the laceration, because I could not keep myself or my instruments aseptic, and would probably do more harm than good. It is the proper thing in theory, but in practice it is totally different. Where there are deep lacerations complicated by hæmorrhage we, of course, have to sew up to stop the bleeding, and this symptom—hæmorrhage when the body is well contracted—is practically the only one to inform us of lacerations of the cervix or demand immediate union.

Dr. Coe: The progress of modern medicine is in the direction of prevention, and now that we have succeeded in avoiding accidents in other directions, we ought to direct our attention towards obstetrics. It was only a few years ago that a good many men denied the presence of perineal lacerations. I do not agree with the last speaker that we cannot prevent these; we cannot always prevent over-stretching and laceration of the pelvic floor. I believe that we ought to examine the vaginal outlet, and if we find a raw surface, it is the simplest thing in the world to close up that

avenue of infection. This question of laceration of the cervix must be interesting to every one. It is an admission of our limitations to say that we are unable either to prevent these lacerations or to attend to them at the time. Women are very much inclined to criticise the obstetrician rather harshly, even when assured that the injury could not have been prevented. Now, whether we accept Dr. Jarman's ingenious theory or not, there has certainly been a great paucity of literature on the subject. We have had no clear explanation why so many cervical lacerations should be unilateral and on the left side. In cases of high-forceps operations, where it is necessary to dilate a rigid cervix, we frequently find no laceration at all. I examined a patient recently, six weeks after a difficult high-forceps delivery, and was surprised to find such a normal cervix. It must be something about the position of the head. Laceration of the cervix is not so much a tear as it is a bruise. I am not always able to recognize the extent of the lesion immediately after labor, though I examine especially after a difficult labor. I do not sew it up unless the tear is quite deep or there is active bleeding. Doubtless the most successful obstetrician of the future will be the one with the best gynæcological training, whose object is not simply to deliver a living child and to secure to the patient a normal puerperium, but to leave her in as good condition as she was before. This is aimed at by the operation recommended by the reader. With regard to the ease of the operation I am not prepared to say. Sometimes I must admit, with Dr. Von Ramdohr, that we are too short-handed to perform it properly. I have been in positions many times when I was content to simply sew up the perinæum. Neither am I prepared to say whether it is meddlesome midwifery to examine every case. I think in future as much attention will be given to the cervix as to the perinæum. However, what we used to call lacerations of the cervix would now be called fissures. So we must draw a sharp distinction between minor lacerations and those in which there is an indication for operation.

Dr. McLean: In regard to causation, in drawing attention to the analogy between lacerations occurring in the perinæum and those that occur in the cervix, I have long since come to the conclusion that it is not the head in the majority of cases that causes the laceration. In my obstetrical experience, I know that the shoulder produces the laceration of the perinæum in at least nine cases out of ten. When I say I know it, I base it on positive ground, for the reason that I have examined the perinæum carefully before the shoulder, and found that there was no laceration and no tearing whatever, and yet when I had carefully delivered the body

of the child, and examined the woman after delivery, I have found I had considerable laceration. This has been my experience for years, and I have demonstrated it again and again. If this is so, might it not be so also with the cervix? The shoulder comes down and hinges suddenly, much more suddenly on this tissue than the head does, and, as it comes down, it presents a sharp surface, which the head does not. I think a little more care in the delivery of the body of children will do away with some of the laceration, as will also the exercise of care in the instrumental cases. As to the bilateral cases, in my experience most of them have a history of instrumental delivery, instrumental delivery as it is done so frequently nowadays, because it seems to me that, in our rushing civilization, we even want our children born quicker than anybody's else. I was called in to deliver a patient last Sunday, and the physician told me that he had been waiting four or six hours, and I found an os not bigger than a fifty-cent piece, hard and rigid. These cases are being delivered by forceps, and lacerations, of course, result. In all those cases where hæmorrhage is severe I have been willing to bring the cervix down for examination, and, if necessary, to suture.

Dr. E. H. Grandin: As far as the causation of these tears is concerned, I am rather inclined to agree with Dr. McLean that it is the shoulder that does the damage and not the head. Furthermore, I question, if in the average woman, the cervix does not tear. I question if many women are delivered without a tear of the cervix—I am not referring to one of the Woman's Hospital varieties of tear of the cervix, which those of us, who do not belong to that distinguished school, do not recognize as tears—but I question if the average woman's cervix does not tear and heal up during the process of convalescence. It used to be, and still is, my custom to examine every woman after delivery. I am less afraid of infecting her than of not doing my best for her, if I fail to examine her after delivery. The fact that women were not examined after delivery years ago was the reason why lacerations of the perinæum were never seen by men who had been forty or fifty years in practice. I also examine the woman, and I wish that every man who is deemed competent to confine a woman would examine her after the completion of the third stage of labor, in order to find out if she is in a condition which he, as a conscientious man, should leave her in. I do not think that it is such a difficult matter to recognize a laceration of the cervix, immediately after the completion of the third stage of labor, and I also know, from personal experience, that it is not such a very difficult thing to sew up a lacerated cervix, where the laceration is of a sufficient degree to call for any suturing. I think it does not call

for that ordinarily, but given a degree which does, when the woman is bleeding from the cervix, I should hope the day would come when every man would sew up the cervix, for the simple reason that he desires to leave the woman in as good condition as he found her in. If he finds her without a lacerated cervix, he ought to give her a chance to maintain this. That light is requisite for the operation I grant you, but that a number of assistants is requisite, I know is not a fact, because we do not want to sew up the lacerated cervix after the fashion which still exists in some quarters. There is but one way to sew it up any how, and that is with the woman on her back, denuding where needed with a sharp knife, taking out a broad piece of cicatricial tissue. In the primary operation, with the woman on her back, you can bring the cervix down with your fingers, and I have not found that it was a very difficult matter to pass the sutures by the sense of touch. As for the material requisite, I should never use catgut. I think catgut should be the abomination of the abdominal surgeon, and it is all the more the abomination of the obstetrical surgeon. To use a material in case of an operation on the puerperal uterus, which in six out of ten cases in my hands, no matter by whom prepared or by what method prepared, is liable to be infected, is, to my mind, bad surgery. Use silkworm gut, and leave it as long as you want to, and when you tie, tie it tight enough so that when the process of involution goes on, those stitches will hold. I do not like the apparatus Dr. Jarman brings here. I bought some things like that in Vienna in 1879 or 1880, and still have them—never had the courage to use them. It is consoling to your conscience to use them, but to repair a lacerated cervix you ought to proceed after a surgical fashion. Dr. Jarman would not use those things in any other portion of the body, and since he is contending for an ideal method, I hope he will cease using a device which is ingenious no doubt, but one which will do no good, and instead sew up the tear of the cervix with a needle and silkworm gut.

Dr. Boldt: I did not hear the paper or the beginning of the discussion. I heard Dr. Grandin's remark concerning material. Perhaps his method of preparation of catgut is inferior to that of others. As far as I am personally concerned, I can show him some catgut which will give the very opposite results. I say that catgut is a proper material to use, and I use it in hundreds of cases, and would not use anything else. As far as operating on the cervix is concerned, a secondary operation, there is no objection to using other material, but lately I have used fine chromicized catgut in secondary operations, and do not want anything better. It answers the purpose and gives as good a result from the operation as you

could possibly get from silkworm, and also as good as from silver wire. There is nothing better. I simply want to make it known that there is one man here who does not condemn catgut, but who upholds it strongly.

Dr. VINEBERG: I am another strong advocate of catgut, and from my experience of four years, using it entirely in the abdomen and never using anything else, I am pleased to say that I have not had one case of infection due to catgut, and I think it is the ideal ligature material. Of course, it has its disadvantages in the difficulty of preparation. I would rather agree with Dr. McLean as to the causation of tears in the cervix. It is more likely to be due to the passage of the shoulder than the head. I am pleased to find that one of the modern men recognizes the procedure of pushing up the anterior lip of the cervix. I have been doing that for a number of years. I was taught to deliver a woman on the left side, and when the head gets down pretty well into the pelvis, I usually turn the patient on the left side, and with two fingers push the anterior lip of the cervix beyond the symphysis. I have had no difficulty in doing that. In these cases I have always been satisfied that the head got pretty well beyond the occiput without any tear. I agree with the reader of the paper that, in the majority of cases, where there is a decided tear, it ought to be sutured, and it makes little difference as to the suture material, whether it be silk or silkworm or catgut. A good deal depends upon the method of putting in the sutures and how tightly they ought to be tied. I am rather surprised to hear Dr. Grandin say they ought to be tied tightly. I would be afraid of necrosis as the result of too tight a suture.

Dr. BOLDT: I may say that, as far as the primary operation is concerned, unless hæmorrhage demands it, I cannot speak as being in favor of it. Some years ago I read a paper before the American Gynæcological Society, with the title of "Intermediate Trachelorraphy." I have not given up that operation, and still continue to advocate it. The results are excellent. One thing that must be borne in mind is that an intermediate trachelorraphy must not be performed on a multipara, because there we have old lacerations. In many cases, where there is a large recent tear, the patient can be put in good condition by merely denuding the torn edges of the cervix, by scraping them thoroughly raw, then the torn parts can be sutured and we will have an excellent result.

Dr. WALDO: I have done this operation Dr. Boldt mentions a great many times, and I think it is very advisable and a good time to operate on the cervix, providing you do not get a chance to do it earlier, and providing that it is a case that you have not delivered

yourself. I think if there is an extensive laceration of the cervix, at the time of the delivery, I think it is not only desirable but our business to fix it up.

The PRESIDENT: The subject has interested me greatly. About twelve years ago, I read a paper on this very same subject, suggested by three cases where there was hæmorrhage, and one particular case where I was absolutely certain that the patient would have bled to death if I had not immediately sewed up the laceration. In that case, it was not due to the head, but to a posterior position, coming down with the hand fixed at the side of the face, and the elbow ripped the cervix through as the head was delivered. I had no particular instruments there with me. There was a thunder storm at the time. I could hardly get enough light to see the patient, but I introduced my two fingers, grasped the cervix and pulled it down, passed a running suture of silk, and that case made a good recovery. But you cannot do that alone. I had to ask the husband of the patient to take hold of the cervix and hold it while I passed the suture. In the first place, the tears are more frequent in the L. O. A. positions. Relatively, they must be more frequent because those positions occur most frequently. I think if you recall the occipito-posterior cases, on account of the necessity of interfering with the forceps, you really have a very much larger percentage of tears in that position than in occipito-anteriors. With an œdematous cervix the trouble is most likely to occur. These are the cases of tear of the cervix where it does not occur from the head or the shoulder, where you have a rigid undilated cervix when labor ensues, and at the time of the pain the uterus rises and gets more into the axis of the pelvis, although it never gets absolutely in the axis on account of the fixation of the abdominal wall. As a result, the force of the pain is mostly thrown on the anterior lip, which is the thicker one, and it must be dilated. If you introduce your fingers and attempt to dilate the cervix you will always find that, while you can hardly stretch the anterior lip, you can almost invariably press up the posterior lip of the cervix, while the anterior is still fixed firmly in front. As to examinations, in private cases they should be made as often as you think it necessary. We ought not to let a patient have one more pain than she should have, and should remember that, as the length of the labor, so is the morbidity and the mortality. If the cervix does not dilate, and the pains are insufficient to do it, and you have to relieve the pain, you may, with as much freedom from sepsis, introduce your fingers into the vagina and dilate the cervix, as you can do an abdominal operation, and, if you cannot do it with that same certainty, you ought not to attempt the confinement;

somebody else ought to do it. There is another point to be considered, and that is that when you dilate the cervix, when the cervix is compressed, the membranes are still there, you do not carry your finger inside of the uterus, the membranes are protecting the cavity and you can keep your fingers so that they will not do damage to the internal part. I cannot conceive how you can rupture the cervix manually unless you introduce more than two fingers, because with two fingers, the power of extension is very slight. If you introduce the fingers and the thumb, you can lacerate the cervix; I have seen it done. As regards the necessity for the operation, in the three cases I reported there was hæmorrhage. In the cases which Dr. Dickinson reported in a paper read about three years ago, recommending operations in this class of cases, he based it upon two cases of hæmorrhage. As to diagnosis, unless there is hæmorrhage and a tear sufficient to cause hæmorrhage, you will find that the cervix is like a wet piece of paper and the vagina is quite the same, and, if you attempt to grasp the cervix you will have a good deal of trouble unless your fingers are familiar with it. As to the operation, hæmorrhage always occurs slightly after labor, and you cannot get the uterus to stay absolutely quiet and prevent a slight flow unless you grasp the torn part and pull it down by a volsella or bullet forceps. When the flow stops I use a pair of bullet forceps and grasp the two sides of the tear with it, pull the cervix down to the vulva and do not use any speculum. I pass a running suture. I used catgut in two cases and silk in another, and in two or three other cases, twisted a silver wire. If the tears in the cervix uteri are perceptible to the finger, so that you can run your finger through them, I think they should be sewn up, if there is the slightest bleeding.

Dr. Jarman (in closing) said: As to the first criticism lacerations of the perinæum can be prevented sometimes. I distinctly said that all lacerations are not preventable, but that some can be prevented I know, and the majority of men present know it. In regard to examinations of every case afterwards, I am still of the opinion that it is a good deal better for a man to know what he is doing and what he is dealing with than to take it for granted that no laceration has occurred. This same sort of feeling forced men formerly to fail to examine the perinæum. Naturally those men who did not formerly examine the perinæum, and who have only recently begun to do it, would be opposed to examining the cervix. I say the cervix can be brought down, for I have demonstrated it. I agree that the speculum should never be used because it prevents the cervix from coming down. I think that, if one examines care-

fully, he will not make the statement that it is so difficult to feel the vaginal rim. There is a difference in the tissue. As you pull down with the two tenacula, they pull down evenly together. The two edges are in apposition, so that you do not need any person to hold the edges for you. You will require some one to give the anæsthetic. I still believe that the vast majority of cases are caused by the head. I have been led to believe so by the fact that in the examination of certain cases, the patient would have a distinct pain, the anterior lip being between the pubes and the occiput, the rim becomes smaller and hugs the head tighter. The force that expels that child is not abdominal muscle to such an extent as it is uterine contraction. The head is forced through the cervical ring during the time of the uterine contraction. The cervix is most tense at that time. If the head gets through, the necessary dilatation must be sufficiently great, so that I cannot help thinking that the shoulders, presenting less circumference ought to be able to pass. Dr. Grandin made a remark about the pin. I used it with perfect success in one case, and can only ask that you bear in mind the reason why probably all lacerations of the cervix do not unite is that there are two actions. The circular action in pulling it downwards in one direction and the longitudinal action in another, so that the two lips are not in apposition. All that the little instrument does is to overcome the muscular action. In regard to catgut, I do not use it in these cases. My silkworm gut I know is absolutely sterile. I do not know of any reason why catgut could not be used. As to slight tears, I only spoke of such tears as are supposed to give symptoms if they are not operated upon. I did not mean minor tears. As to Dr. Murray's statement, he must not receive the idea that I said the tears were more frequent with L. O. A. positions.

The following paper was read by title, and referred to the Transactions:

Personal Experiences with Vaginal Section.

By A. Brothers, M.D.

(See page 541.)

Official Transactions.

A. M. Jacobus, *Recording Secretary.*

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, March 9, 1897.

The *President*, BACHE MCE. EMMET, M.D., in the Chair.

Hysterectomy, with Subsequent Hæmorrhage Controlled by Injections of Ergotol.

BY W. E. ARD, M.D.

(See page 683.)

DISCUSSION.

The PRESIDENT: I will put this matter before the Society for discussion now, if it is agreeable to Dr. Ard, and if there is nothing particular to demonstrate on the specimen.

Dr. A. P. DUDLEY: Mr. President, I have only a few words to say, and it is with reference to leaving the ovaries and tubes when we make vaginal hysterectomy. Possibly circumstances might arise when it would be impossible, or safer for the life of the patient, to leave the ovaries and tubes intact, but I should prefer to remove them always with the uterus, or after the uterus had been removed, if done by the vaginal route in preference to leaving them, because, if we do not I believe we will leave an element of danger (as shown in this case) for the future; possibly a case of reflex trouble, and also of ovarian tumor. Not only that, but there will be the possible danger of subsequent pregnancy, even though we have made vaginal hysterectomy, because such cases are on record where the uterus was removed per vaginam and the ovaries and tubes left, the latter being drawn down into the top of the vagina, and the parts closed with the tube in the top of the vagina. Pregnancy occured and the tube ruptured in the sixth week of pregnancy. That would be two reasons why I should prefer to remove the ovaries and tubes if I had done vaginal hysterectomy. Another is the one already stated by the Doctor, the danger of hæmorrhage from the ovarian arteries, in case we have not secured the artery with the clamps, and I think cases of that kind have been mentioned in this Society. The hypodermic use of ergotol is certainly a good thing it is well to know about, and I am glad to have the Doctor report a case where it re-

sulted favorably. I have never ceased to regret a vaginal hysterectomy that I did last year that was followed by hæmorrhage, and I lost the case in five hours and a half from hæmorrhage that I could not stop, even though I did open the abdomen, did sew up the pelvic cavity with catgut suture from within, did clamp every vessel which I saw and packed the vagina, which was closed at the top, with dry iodoform gauze, and the patient died in five hours and a half, having bled to death. It was one of those bad cases where I chose the vaginal route because of the fact that the husband would not allow of the abdomen being open, and I met with disaster from hæmorrhage. I say, for that reason, I should prefer to do the work in a complete manner. I think myself that the ligature is better than the forceps, in spite of the fact that the foreigners use them; and I may say perhaps for the benefit of some of those who have not heard the report, that those gentlemen who visited this country, or rather Jacobs, has abandoned his method entirely. He now uses a clamp only to clamp the broad ligament while he removes a uterus, and then, beginning at the top, he ligates with silk, and after all the clamps are removed he closes the vaginal wall with catgut sutures, leaving the ligatures, whereas previously he used to pack the pelvis with gauze and then the vagina, placing the catheter. Now he does not even place the catheter but leaves the vagina perfectly free.

Dr. E. E. Tull: I have had three cases the past year where a secondary operation has been necessary to remove the ovaries and tubes that were apparently normal at the time the uterus was removed. In one case there was an ovarian cyst which developed after removal of the uterus per vaginam, the other cases were pyosalpinx. The uteri were fibroid when removed, and I think the infection was probably carried from the clamp or the ligature. In the case reported I think a great deal of conservative work might have been done with the uterus in place through the vagina. Possibly if that had been properly dilated and scraped and the polypi removed, it would have been unnecessary to remove the uterus.

Dr. George H. Mallett: The interesting points in the case seemed to me to be the polypus being in the uterus and not having been discovered, and the other the fact of leaving the appendages *in situ*. If there is a way of finding the true condition of the uterine cavity I think we ought to try and use that method. Was the case curetted three times, Doctor? When there is any doubt as to the contents of the uterus the finger should be introduced.

Dr. Ard: Three times; once by a gynæcologist and twice by the family physician.

Dr. Mallett: It would be well for us to dilate thoroughly and

search to see that there is no polyp. Of course, if that polyp had been discovered, the woman would undoubtedly have had the uterus left in. In regard to leaving the appendages, I would like to ask the Doctor if the woman has had many nervous phenomena since.

Dr. ARD: She has not. There has not been sufficient time since the operation to judge.

Dr. MALLETT: I think that would be an important point. If the woman could be spared the nervous symptoms it would be a point in favor of leaving the appendages after hysterectomy. I think Dr. Dudley blames himself very unjustly in regard to the case he spoke of. I happened to be present, and see no reason why he should blame himself for the unfortunate result, because the operation was well performed and it would happen with anybody.

Dr. W. GILL WYLIE: Was this polypus in the uterus when it was curetted?

Dr. ARD: The hæmorrhage was present.

Dr. WYLIE: I would like to say one point on curetting the uterus. I think it is a very important matter to remove all polypi. I have been using for many years polypus forceps, and have several sizes, specially for the purpose of inserting in every case where I curette. I do not think I have curetted a case in twelve years that I have not used the forceps to search for polypi, and it has been of great service. I think I can find a polypus almost as certainly with the forceps as I can with my finger. Many cases of dysmenorrhœa have not been cured because the polypi have been left in, and I can recall three cases that came from one gynæcologist in this state, that had been operated upon, and I afterward found the polypi, removed them and the dysmenorrhœa was cured. Without the forceps I would not have discovered many of them. I have also been able to tell whether a small fibroid was in the uterus. I think the use of these forceps has been of as much benefit to me as almost any one instrument that I have made for any special purpose. The interesting point would be to determine by the microscope whether there are any fibroids in this uterus, and, if so, it is a good thing the uterus was taken out, unless the woman was a married woman, and she might become pregnant and have a child before they developed. If there are fibroids there they are likely to develop. Do I understand that the uterus was taken out and the ovaries left?

Dr. ARD: Yes.

Dr. WYLIE: What was the object in leaving the ovaries?

Dr. ARD: It is claimed by some gynæcologists that the nervous symptoms are much lessened by leaving the ovaries.

Dr. WYLIE: I have always been under the impression that it

was better to take them out. They are very apt to result in cystic formation. I have had to operate on a number of cases where a piece of the ovary had been left and formed a cyst, and they reforming until I removed the ovary; and I think it is very doubtful whether they might act normally for a little while, but I would be inclined to expect worse symptoms by leaving the ovaries.

Dr. MALLETT: Doctor, you spoke of some of the uteri being very small and hard to dilate. Has not it been your experience that only the large uteri bleed?

Dr. WYLIE: Bled excessively, but I often find polypi that are high up and the os is hard and rigid, and it would be risky to dilate. I think the forceps in that case would be better and could be used. If I think of it I will bring the special forceps to the Society. They are of different sizes, and I apply them so that the joint comes exactly at the os internum, and you can open the forceps. That is the resisting point, and we have them exactly the right size; you cannot open them. They won't open because the os will not dilate sufficiently with the joint at the os externum.

The PRESIDENT: I would say a few words about the point made by Dr. Wylie, of using the forceps instead of the finger; of course, it is a good thing that they can grasp the object, but it seems to me the finger is always better to determine its exact location, just how it is placed or how many there are, and then there is no blind grasping or pulling, and one goes directly to the surface where they can be gotten at best.

I also gather from what he said that we are to understand that, if a salpingitis exists in a case of this character (hysterectomy) we might expect a development of cysts in the ovaries if they are left *in situ;* that they would develop in consequence of that. That seems to me absolutely a new theory.

Dr. WYLIE: It is simply a fact. If you have a case of gonorrhœal trouble that is not a pyosalpinx, you have very dense adhesions, and with this there is a peculiar change where the ovaries become cystic rapidly and very bad cysts form. They are covered by adhesions. Now, cysts develop in cases where the parts of the ovaries have been left, and they will keep forming rapidly; in fact, I have seen it in four or five cases.

The PRESIDENT: I cannot conceive of disease being set up in the ovary because of the presence of a diseased tube where there has been ablation of the uterus, nor can I see how Dr. Wylie explains these ovaries being in the neighborhood of the fundus of the vagina at a subsequent date, how they can be present there, and how one can recognize and puncture cysts in that ovary. I cannot under-

stand it because I have not seen it. Dr. Wylie believes it because he has seen it.

It has been my lot several times to feel that I was obliged to leave the ovaries and portions of the tubes. I feel also with all those who have spoken, that it is eminently desirable to bring these organs within the ligature or clamp at the time of removal of the uterus or immediately afterwards, but I have also seen a great number of cases where they have not been removed, and I have never seen a case in which there has been any marked harmful symptom, unless they were diseased at the time. If we find the ovaries diseased at the time, we would remove them rightly, and if we recognize that they are cystic we ought to make an extra effort to get them out; but if they are imbedded and there is no evidence of cystic disease, I have not felt that we were exposing that patient to any serious subsequent risks by leaving them. We may do more harm by picking at them fruitlessly.

Referring to the other points, the hæmorrhage which Dr. Ard encountered, is always a troublesome one. Apart from the necessity of accurate ligation or absolute pressure by the clamps, I think when we have such a symptom as that we can still act efficiently without taking down the dressings, by making firm pressure against the vaginal dressing from without and from above the pubes, getting the bleeding point sufficiently within our pressure to check it, unless, of course, it is a large vessel that is bleeding. It has been my experience to do so. If we are obliged to take the dressing down, and still hope to accomplish our purpose by pressure, it is well to use the Mikulicz method of packing, stuffing it in the shape of a ball within a bag, also maintaining pressure from above. Another method which I have found of service is leaving the dressings in place, and passing through them or by their side a syringe charged with a solution of persulphate of iron, which holds the bleeding in check.

Dr. ARD: There are one or two points I wish to speak of: first in regard to the fibroids. Dr. Wylie raises the question of their being fibroids. I would like to say that the largest one of the three is about the size of a hickory nut, and can be seen in the jar. There is no doubt about its being fibroid in character, it was very well marked; second, had the polypus been discovered and removed, it would only have called for a subsequent operation, owing to the presence of three other fibroids; third, in regard to leaving the ovaries, it was partly experimental with me. I was led to do so from the experience of Dr. Kelly. He has for several months not removed a normal ovary, and finds the nervous symptoms are very much lessened. He has not yet made a report, as sufficient time

has not elapsed since operating. One of my forceps broke in applying it, which occasioned me considerable trouble, but I do not attribute the hæmorrhage to that, as it was below the point of bleeding.

A Fatty Tumor.

The PRESIDENT: I have a specimen that is of interest. I do not know that it will show anything specially in itself, because it is preserved in formalin, but I thought it might be of interest to present it and then to speak a little on the matters germane to it. This specimen was removed from a young woman of thirty-two at the Woman's Hospital. She presented about the navel quite a mass, which, when she was standing, was about the size of an adult fist; when she would lie down it was considerably below that size. An exploration of the abdominal wall showed that there was a separation of the tissues in the median line, just at the umbilicus, and there was a mass there which one could readily grasp, which presented at the opening of the umbilicus. It was exceedingly painful to the touch. The case presented itself as a hernial opening and a mass within it, all one with the umbilicus, and the question was, what to call the mass. The patient had been sent me, I think, from Elmira, and her physician wrote me that a number of other physicians had seen her and none of them would pronounce on it definitely, and nothing was done. I took it to be a malignant mass, in that the history of the growth was not of very long standing, that it seemed to be quite varying in consistency, that it was adherent at one point and apparently on the increase; but the patient had not shown any symptoms of emaciation, and there were no other points that I could fasten on. I asked one of the gentlemen at the hospital and our consultant, Dr. Thomas, to see it, but no opinion was given other than it was an umbilical hernia. I excised the mass, and the patient made a very uneventful recovery. The growth was related very closely to the umbilicus and to the urachus, which I followed down, ligated and excised as far down as I could reach without disturbing the intestinal masses over much. The mass proved to be omental; it is fat, which has been subject to inflammation and atrophy, and as tumors of this character are exceedingly rare, I thought it would be well to bring it to your attention. I have looked up the matter of tumors of the omentum, and find they are exceedingly rare. The few I found were as follows: One of the conversion of the omentum into a semi-cartilaginous mass; omental hernia; fibrous tumor of the omentum, and cystic tumor of the omentum. These are of old date, and bear no histological history. One

mentioned by J. Greig Smith presented large masses like earth worms that were fastened to a tumor of the womb. These were the enlarged vessels of the omentum, with atrophy of all intervening tissue. The mass that I present, so far as I know and so far as Dr. Freeborn (pathologist to the hospital) knows, is a unique one. There are two cases mentioned in an article by Dr. Max Rothmann,* and they both represent a change of subcutaneous fat, in tumors which developed, one in the axilla and the other on the arm, both giving evidence of the three forms of atrophy—simple, serous and proliferating. If it is agreeable, I will read an abstract of the literature, which I owe to the courtesy of Dr. Grad (house surgeon), who has kindly translated it for me (reading of paper) and exhibition of specimen with references to a lithographed plate showing the histological changes. There is one point which occurs to me, whether we may suppose that this process or change going on in the portion of the omentum near the umbilicus and which had become fastened to it could in any way thin out the tissues, induce a like atrophy in the abdominal wall and so produce this umbilical hernia. This woman was very fat at this point, but there was no other history to account for this umbilical opening.

Discussion.

Dr. Wylie: I think they are not very rare. I saw in one case a tumor probably three inches in its deepest portion shaped like an immense tongue. I had taken out a number of adhesions, and the question arose whether I should take off the omentum as a tumor. I did not take it off, and about two years afterwards ventral hernia formed, and when the peritonæum was opened to remove the hernia that tumor had disappeared. The cystic kind I have seen, and I have seen the dilated blood vessels. I have had two or three of them.

The President: These inflammations of the omentum are not very rare. I do not find any mention of recent date, but going back to the early sixties I found quite a collection, but mostly where they had been imprisoned in a hernia.

Dr. Dudley: Did I understand you to say that the woman had suffered for some time with navel hernia?

The President: Only from the time that she noticed this mass coming there, and it was a painful spot, and that made me raise the question whether this process had produced a similar change in the fat where it could reach, and whether it had caused an absorption there, and so had allowed of a hernial opening.

* Virchow's Archives. Band 136. Heft 1, 1894.

Dr. DUDLEY: This tumor was directly attached to the omentum; it lay external to the peritonæum?

The PRESIDENT: It lay in the peritonæum.

Dr. DUDLEY: Was the tumor external to the general peritonæum?

The PRESIDENT: Oh, no, it was inside the abdominal cavity; it was pretty closely adherent to the anterior wall. It had established some peritonitis right there.

Dr. N. G. BOZEMAN: I remember once doing hysterectomy for fibro-cystic uterus and seeing a portion of the omentum the size of the hand and one and a half inches thick adherent to the wall of a cyst; it had all the appearances of the specimen shown. The change, I have no doubt, was brought about by inflammatory action in the attempt of nature to keep the contents of the cyst out of the abdominal cavity; for when I separated the adhesion pus welled up in great quantities, the thickened and changed omentum having formed a cap-shaped covering for a perforation in the pus sac.

Dr. MALLETT: Had this patient gained flesh in other parts?

The PRESIDENT: She was very fleshy, but she had not gained rapidly.

Dr. MALLETT: In almost all of these cases there is an accumulation of fat in the omentum.

The PRESIDENT: In that case there was no accumulation of fat.

Dr. MALLETT: I once opened an abdomen to determine whether there was a tumor, and I had two eminent men to examine with me. I found an enormously thickened omentum. The fat seemed to have accumulated very rapidly and simulated a cyst.

Degenerated Ovum.

Dr. GEORGE T. HARRISON: I am sorry I did not know you wanted specimens, or I would have brought up a specimen from a case that interested me very much, especially as to differential diagnosis. My own diagnosis of the case was that the woman was suffering from subinvolution, with chronic endometritis. There was no clinical history to lead me to suppose that she was pregnant. There were no signs, objective or subjective, so I thought I could exclude that. I sent her to St. Elizabeth's Hospital for the purpose of dilating the uterus, curetting and packing; but the uterus presented a condition to which I never had seen anything exactly parallel. It was so soft and mushy that you could not hold it with the forceps. In order to steady it so as to introduce the dilator, I had to seize the cervix with two bullet forceps. When I put in my

dilator and commenced to dilate, I did not use any more force than I ordinarily do; to my astonishment the tissues gave way, and I must have gone through all the intervening tissues to the peritonæum, because I ruptured one of the branches of the uterine artery and the blood began to spurt in a lively manner, so that put an end to my efforts in the way of dilatation and curetting. I postponed the latter, and controlled the hæmorrhage by packing the uterine cavity and cervical canal; the case went on favorably, and I did not remove the tampon for some five or six days. I had no trouble with the hæmorrhage after that, but some time later, after two or three weeks, she began to have pains, and meanwhile presented some symptoms that made me suspect pregnancy, because she had continued vomiting. I then proceeded to curette the uterus, and I got out ovular membrane. There was nothing in the way of a fœtus at all, no sign of it, but the mass evidently showed a condition indicative of some sort of degeneration. I have not had it examined microscopically; but it was evidently a degenerated ovum. The peculiarity of the case was the softened condition of the uterine tissues, and in my efforts of dilatation producing that rupture. She had one child three or four years ago, and from that date she never had been pregnant previous to this time. I think the microscopic examination would show that it was a case of degenerated ovum, and that would explain the condition. I had the specimen, but did not bring it with me.

Infusions of Normal Salt Solution.

Dr. Le Roy Broun: I have two cases that interested me a great deal, especially as they were connected with each other in one respect; and I would like to report them for the opinion of the members of the Society. They both involve the question of infusion with salt solution. The first case our President was kind enough to come to the hospital and see with me. It was a case of ruptured uterus following a curetting, in which the operator had pushed his curette through the horn of the uterus, and then, becoming nervous and being anxious to see what damage had been done, he introduced his two fingers and accidentally tore the entire length of the uterus into the broad ligament of the right side. Under considerable shock the uterus was sewed up, through the abdominal incision, and she was infused with one quart of salt solution. The solution was allowed to run in as rapidly as it would go, the length of time being from three to five minutes for a quart. Within two hours afterwards, her pulse being extremely weak still, she was infused with a quart more in the other arm, and after that she went along to re-

covery, but it was a lingering recovery, it was a recovery that was complicated by pleurisy of the right side and pneumonia of the same side, which pneumonia commenced twenty-four hours after the operation of sewing up the uterus. She had an exudation in the right lung, with fever, for at least six weeks. However, she recovered and was discharged in splendid condition. For the operation the abdomen was opened. I hesitated extremely, on account of her weak pulse and poor condition, to open the abdomen, but Dr. Emmet gave his moral support, and I felt there was nothing to do if it proved she would die on the table. It was fortunate that I did so, because she recovered. The second case happened some two weeks ago. It was a case of vaginal hysterectomy involving considerable adhesions. There was a good deal of exudation around the uterine arteries, and I used clamps. The clamps did not slip, but twenty hours after she bled very profusely apparently from a vein. I saw her at half past eleven in the morning, and three hours afterward was summoned to the hospital. When I got there she was extremely weak. I took her to the operating room, got the clots out of the vagina, and while in the act of clamping what I thought to be the bleeding point, the anæsthetizer told me that her pulse had given out entirely at the wrist. The bleeding being stopped, I infused her at once with two quarts of salt solution, and having been impressed with the fact that possibly the rapidity of the flow of the salt solution in the first case had caused the pneumonia, I made this salt solution go in very slowly, so that it took fifteen to eighteen minutes for a quart. She was infused with two quarts. In an hour and a half her pulse failed exactly as before; she was almost pulseless. I infused her with two quarts more in the other arm. Her pulse came up after each infusion to its full strength. Her respiration at each time would go down from forty to twenty-five; this woman also recovered. She will not be kept in the hospital any longer than usual. I report the two cases in connection, as I believe (and I think I am upheld by some authorities), that we use too little of the solution when we do infuse. I recall an article from the Rotunda Hospital I saw some time ago in which there were reported six cases, and in each case there was as much as eight pints used, and all the cases recovered. I call to mind two years ago, while at the hospital by accident, the house surgeon came to me and said there was a patient of one of the surgeons who was bleeding, and he could not get this surgeon or the assistant surgeon or any of the staff. I went in the operating room. She was very weak; her pulse was very feeble; I opened the abdomen, found the bleeding point, ligated it, and infused her with a quart of salt solution. She was put

back to bed, with a good pulse, and I thought she would make an excellent recovery. I was perfectly surprised to find the next day that she was dead. Taking that case, the pulse once having come up and then given out; then the other case, the woman having rallied under two quarts, giving out and coming up again under two quarts, and finally recovering, it rather impressed me with the idea that we are apt to use too small a quantity on the one hand, and on the other, when in the first case pneumonia and pleurisy followed, that the fluid is allowed to flow in too fast. I know in the second case it was with the greatest difficulty that we could make that fluid run as slow as fifteen minutes to the quart. The bottles had to be held just above the arm, and almost all the time I was pinching the tube; here there was no trouble with her lungs. I report the case on account of the large quantity used, and second, to get the idea of some of the members with reference to the rapidity of putting in the solution. In this article spoken of from the Rotunda Hospital the writer claimed that the fluid should not run faster than three ounces to the minute. To sum up the conclusions to be drawn from these cases, I believe that

1. Ordinarily we do not use enough of infusing salt solution; that from six to ten pints can be used with impunity and benefit.

2. The fluid should not run faster than fifteen minutes to the quart, the danger being, if faster, either overcrowding a weak right heart, sudden heart failure being the result. Or a sanguineous congestion of the lungs resulting, giving rise to a lingering recovery.

Discussion.

The President: This subject is open for discussion. Will anybody volunteer?

Dr. Wylie: Mr. President, I think they are very interesting cases. I have had somewhat of a practice in using fluids, and I found by experience that small quantities are of little or no service. I have used as much as three quarts, and find by actual trial that it is absorbed. And I think if you begin early you can nearly always prevent the necessity of anything like transfusion. I never measure the exact quantity, because it was in cases after an operation, and usually it has been injected some time in connective tissue, and it is amazing the amount that will go in. I believe the Doctor's experience is exceedingly interesting. I believe in opening the abdomen in extreme cases without waiting to recover from the shock, but I think while doing that about every twenty minutes a quart of the solution should be put into the rectum, and it is amazing how

much will be absorbed, and how it will keep up the patient during the operation.

Dr. DUDLEY: I can add nothing except to say that at the last meeting of the Obstetrical Section of the Academy I reported a case where I infused previous to commencing an operation, in order to offset shock, with exceedingly good results. The case was a ruptured extra-uterine pregnancy where the woman was in profound shock and beginning peritonitis; in fact, there was septic peritonitis existing at the time, and I did not think the woman could stand the shock of the operation with any prospect of success; so I gave a quart of the saline solution into the breast and a tenth of a grain of strychnia before beginning the anæsthetic, and the result proved the wisdom of the procedure, the woman stood the operation much better than we expected, and recovered, going home to-morrow. It was an exceedingly bad case of ruptured extra-uterine pregnancy with septic peritonitis, from what cause I do not know, unless it was due to the fact that the pyosalpinx existed on the other side, and the family physician who had the case in hand before it was brought to the hospital tried to aspirate the swelling in the pelvis through the vagina. Whether the needle was septic, or whether he tore some portion of the pyosalpinx, I am unable to say. I do not think that his procedure caused the suppurating process to let up, and it did me such good service that I should anticipate shock in that way in the future.

Dr. ARD: I have used the salt solution in a number of cases in the veins and also in the connective tissue, and my experience has been that it is taken up much more slowly in the connective tissue, and with better results than when used in the veins.

Dr. W. L. DUNNING: The case reported by Dr. Broun has been of special interest to me. I was told the danger of using too much of this infusion and cautioned against it. I have had occasion to infuse in three cases, one of laparotomy and two of secondary laparotomy; one of the latter recovered and the other two died. I used only a pint of the normal salt solution intravenous infusion, in each case. As I recall the reasons given for the supposed danger were over-dilution of the blood, it having already become much reduced, and the embarrassment that too great a volume of fluid would offer to a greatly enfeebled heart; but Dr. Broun's experience in the cases that recovered certainly has disproved that theory. It was very instructive to me, as I have never used over a pint.

Official Transactions.

G. H. MALLETT, *Secretary.*

ABSTRACTS.

THE STATUS OF GYNÆCOLOGY ABROAD.

France.

Surgical Treatment of Acute Pelvic Inflammations.

Duplay and Clado (*Semaine Gynécologique*, January 5, 1897), criticize the proceedure, usual in pelvic suppurations when either acute or exacerbations of chronic processes, of waiting for the subsidence of febrile symptoms and merely making, when possible, an outlet for the pus through the vagina; and advise, rather, immediate radical operation in all cases where the appendages are already rendered unfit for fecundation.

In cases of pelvic suppuration where no outlet presents towards either the vagina or the abdomen, and where general infection exists, what is the result of expectant medical treatment? Either death or a still more serious general infection, by which operation is yet further delayed and rendered at once less likely to be successful and more difficult of performance. In cases in which the seat of suppuration is accessible from the vagina, the immediate result of incision from that canal is usually satisfactory; but often the febrile symptoms return after an interval, many times because the cavity opened is but one of several; in which case, unless these latter open spontaneously and immediately, the patient's condition becomes the same as at first. Even if all the pus is evacuated, we have produced only a transient cure and left untouched the causal conditions of the trouble, *i. e.*, the diseased organs. The patient suffers from pain, fatigue and general debility; the fistula, moreover, often persists, making a later and more difficult operation necessary. The proper measure in these cases is a single radical intervention—vaginal hysterectomy—indicated, rather than contra-indicated, by the fever and other phenomena of infection.

The following cases are reported in support of these views:

Case I., thirty-six years old, had had an abortion ten years previously, from which time she had suffered from recurring inflammations; for six months she had had a fistula from the spontaneous opening of a retro-uterine abscess. On examination, the uterus was found displaced and bound by adhesions; the posterior and lateral

culs-de-sac were effaced by large masses, œdematous to the touch, while the appendages were so included in the adhesions as not to be distinguishable. The patient was anæmic and emaciated, the skin of a yellowish hue and the legs somewhat œdematous; she had evening fever and often morning sweats. No favorable result followed attempted dilatation of the fistulous tract. Hysterectomy was therefore done, a difficult operation as the uterus and appendages had to be extracted in small pieces; two collections of pus were evacuated, one of which contained about half a tumblerful. The temperature immediately fell to normal, but after two days began to oscillate between 37° and 38° C. Daily serum injections were employed, and after the tenth day there were but two brief rises of temperature. Fifteen days after operation the wound was closed.

Case II., thirty-one years old, had had an amputation of the cervix in 1892, and in 1894 an extra-uterine pregnancy, with shortly afterwards symptoms of retro-uterine hæmatocele, uterine hæmorrhage, and finally opening of the accumulation into the rectum. The fistula persisted, and febrile symptoms set in and became permanent. On examination, the uterus was found nearly immobile; a diffuse œdema occupied the posterior cul-de-sac, while the annexa were enlarged and on the right side adherent; the general condition was fair; the temperature varied between 38° and 38.5° C. The trouble being bilateral, both uterus and appendages were removed; during the operation a pocket of pus was opened and drained through the vagina. The result was entirely satisfactory and the patient left the hospital on the twenty-first day.

Case III., forty years of age, gave a history of an abortion in 1892, and for twenty months previous to her entrance to the hospital had ceased to menstruate. There was a tumor in each cul-de-sac, that on the left larger and nearly fluctuating at one point; the cervix was enlarged, œdematous and scarred, and the uterine mucosa covered with a thin, purulent secretion; the patient was anæmic, emaciated and septic, her temperature varying between 37° and 40° C. The uterus was removed, and some pus that had collected outside the appendages was evacuated on opening the posterior cul-de-sac; the appendages were then removed. The fall of temperature was delayed till the following day, and for two days there was a rise to 39° C. after which time it remained normal.

Case IV., fifty-one years old, had passed the menopause two years previously; she presented prolapse of the anterior and posterior vaginal walls and of the uterus, the organ being retroverted and the cervix near the vulva; the left oviduct was painful and enlarged. She had suffered from metritis and leucorrhœa, and for

two weeks had been running a temperature. The temperature was disregarded and a successful hysterectomy performed.

Case V., forty-five years old, had had a probable uterine polypus removed in 1892, and had suffered much from leucorrhœa, metrorrhagia and abdominal pains. Examination showed a uterus increased in size and not very mobile; on one side there was a mass of the size of a lemon, hard and immobile; on the other a smaller mass, apparently of plastic material. Under observation the patient became worse, developing fever and severe pains, while the uterus and annexa became united in what appeared to be a single mass. The uterus on removal presented several fibrous tumors; on the right side there was parenchymatous salpingitis, but on the left the pocket could be removed only in pieces. Save for a remaining vaginal fistula, the operation was successful.

Case VI., twenty-six years of age, presented some symptoms of a blenorrhagic metritis, and some tumefaction of the annexa, more marked on the right side. The patient was curetted and did well at first, but on the seventh day developed fever, vomiting and pain; an examination the eighth day revealed an inflammatory mass occupying the whole of the true pelvis, and uniting the uterus and appendages. The tenth day the patient presented some symptoms of collapse, and on the twelfth day the uterus was removed; two small pockets of pus were opened, while in the right oviduct which was removed piecemeal a small placenta was found. This explained the recrudescence and extension of the inflammatory phenomena in consequence of the curetting. The cure was complete.

The authors conclude, then, that operation during the febrile period is no more serious than an ordinary hysterectomy and somewhat simpler of performance. The method must depend on the particular case; we should remove the purulent collections unopened if possible; if not, delay the opening until the extirpation of the uterus. If the collection is in the posterior cul-de-sac, we may trace the posterior incision and loosen the tissues a little, but defer reaching the peritoneum until the close of the operation, when we can guard against infecting the peritoneal cavity by a packing of iodoform gauze. We should remove the uterus as a whole when possible; if not, the cervix is first amputated, then the body broken up into fragments and abstracted piecemeal; when only the two fragments in connection with the appendages remain we pack the cavity with gauze and remove these and the appendages. In all these cases except one there was a decline of temperature to normal on the evening of the operation, where it remained till the third day; a rise to 38° or 39° C., then occurred, which was, however speedily

reduced by a purgative. No further rise occurs except in cases in which there may be some retention of pus from the impossibility of completely removing the pockets; in such cases irrigation and possibly dilatation are indicated.

Germany.

A New Case of Hæmatoma of the Round Ligament of the Uterus.

J. Schramm (*Cent. für Gyn.*, November 7, 1896), refers to Gottschalk's case, the only one that has as yet appeared in the literature, of hæmatoma of the round ligament, and reports the following case of his own in a woman of previously good health, thirty-five years old. Her history was that seven months before she came under observation she had sat down suddenly upon the long knob of a water-closet cover, from which she received a severe blow in the right inguinal region. A small swelling was noticed a few weeks later, which gradually increased in size, the change being quite independent of the menstrual periods. Walking caused great pain. On examination, a tumor of the size of a hen's egg was found in the right inguinal region; it rested on the horizontal ramus of the pubes but could be slightly displaced; the overlying skin was freely movable. The tumor was of firm consistence except in the middle, where it had a slightly elastic feel. It gave the impression of rising from a pedicle in the inguinal canal; it was flat on percussion, and unaffected by coughing or pressure. Vaginal examination showed nothing abnormal. The diagnosis lay between cyst and fibroma of the round ligament; the consistency of the tumor favored the latter, but it seemed hardly possible that a fibroma could have developed in so short a time.

An incision was made and the tumor enucleated; a pedicle was found and tied off; the latter was about the thickness of a pencil, extended for two inches into the inguinal canal, and was formed by the round ligament; the tumor was then removed, and the patient made an uneventful recovery. The egg-shaped cyst was found to contain dark, fluid blood; its walls were about two inches thick, their inner surface for the most part smooth; no communication between the cyst and the pedicle could be found. The inner layer of the wall, which could be stripped off in the preparation, was found to be made up of smooth cells, long and flat, and closely laid with neither gaps nor connective tissue between them. The next layer, fairly thick, was composed of smooth muscle fibres, with much connective tissue and many vessels between their fasciæ. The outer

layer was of connective tissue with very few cellular elements and almost no blood vessels. The pedicle was formed of fasciæ of smooth muscle fibres, united by a connective tissue rich in blood vessels and elastic fibres. Gottschalk considers a central gap in the pedicle as characteristic; in this case not one but many such were found, formed by wide meshes of connective tissue. The author believes, with Gottschalk, that such an hæmatoma is not a neoplasm, but an ectasis of a cord originally hollow, whose cavity was not normally obliterated; this hollow receiving a continuous blood supply from the injured vessels and gradually enlarging as an hæmatoma.

Bicycling from the Gynæcological Point of View.

Otto Flöel, (*Deutsch. Med. Woch.*, November 26, 1896), investigating the question of bicycling for women, has observed twenty-four cases, all but two of which were between the ages of twenty and forty, and eleven of which were in good health when they learned to ride. Twelve had suffered from general nervous symptoms, anorexia, headache and disturbed sleep; all these were improved, and in eight cases the symptoms completely disappeared. In one case attacks of biliary colic, previously frequent, grew rare. In one case of anæmia the condition grew worse during a summer's riding. None of these cases had presented any serious gynæcological troubles; two women had had "discharges" that ceased on learning to ride; one woman recovered from a retroversion of the uterus; in a case that five years before had undergone ovariotomy, there occurred an acute uterine inflammation that quickly passed. Menstruation was unaffected in sixteen cases; in seven others the influence seemed in general to make this function less frequent but more regular; generally the period was somewhat shortened and the flow less profuse; one woman, thirty-two years old, who had never menstruated, after learning to ride began to menstruate every four weeks, though the flow was scanty and lasted but a day. Dysmenorrhœal troubles were improved. Five of the women gained in weight, while eight lost. One woman reports that her urine, formerly cloudy, is now normal. Of nine women suffering from constipation, five are cured and the others are bettered; two of the nine had also hæmorrhoids, which have disappeared. One woman rode during the early months of pregnancy without any bad results.

While the observations upon so small a number of cases are necessarily fragmentary and absolute conclusions impossible, the author believes that bicycling exerts a favorable influence on

troubles resulting from relaxed conditions of the pelvic organs, particularly prolapse and some other changes of position; possibly also on chronic inflammations of the pelvic organs. Its favorable influence on the general health must be admitted, even though this may not immediately appear, owing to the fatigue of the unaccustomed exercise. Its effect on menstruation seems to be good; it is probably best not to ride during the period, though one woman reports that she rides at that time without ill effect. Fat people we must expect to lose in weight, whereas those that are thin from anæmia or anorexia will gain. The benefit of bicycling in constipation is very marked. Care should be taken to avoid great fatigue at first; the position should always be erect, the body resting on the nates, supported by a saddle which should be horizontal and tightly stretched; as a slack saddle might cause sexual irritation, though no such condition was reported by these cases. The clothing should be loose, and its weight borne by the shoulders; no corset should be worn unless demanded by the condition of the breasts, when it should be loose and reach only to the waist.

Hungary.

Three Cases Treated with Dry Ovarian Serum (Merck); One Case Complicated by Epilepsy.

Dr. Karl Bodon, of Budapesth (*Deutsch Med. Woch.* November 5, 1896), became interested in articles by Professors L. Landau, R. Mond and Chrobak, giving details of their use of ovarian tissue (either fresh or in the dried form prepared by Merck) in cases of menstrual disorders, and reports three cases in his own practice.

Case I., nullipara aged twenty-five. Laparotomy had been performed six months before, with prompt recovery. As no trace of the ovaries could be found on examination, it was undoubtedly a double oöphorectomy. Uterus normal. Patient had suffered for four months from insomnia and gastric catarrh, severe but intermittent headaches, loss of appetite and frequent vomiting. She was directed to take tablets of Merck's "ovarine," beginning with two tablets per day and increasing to four, then to six. On the second day the patient reported an improvement in the condition of her stomach and head, and at the end of two weeks all her troubles had disappeared, but she continued taking the tablets at the rate of one a day until the first hundred ordered were used.

Case II., nullipara aged forty-seven, and very corpulent. Her menstruation had gradually ceased, but she suffered from sudden at-

tacks of heat, accompanied by palpitation of the heart and mental depression. On examination the thoracic and abdominal organs were found to be normal. The patient's troubles were evidently due to the menapause, and ovarine tablets were ordered. At first her stomach was much disturbed, and she had repeated eructations of gas, accompanied by cardialgia, but after a few days tolerance was established, and her unpleasant symptoms disappeared under the continued use of the ovarine.

Case III.—The patient was eighteen and unmarried. Menstruation had appeared in her fourteenth year; it was regular but somewhat scanty, usually lasting only two days. From the beginning of the appearance of the menses, the girl had convulsive attacks, screaming and falling to the ground but retaining consciousness. At the age of fifteen she had her first epileptic attack, but with bromide treatment she was free from any attack for six months. At the end of that period, however, the attacks commenced with greater frequency than before, and in the intervals between the severe convulsions frequent attacks of the nature already described occurred. She came under the care of several eminent specialists, who failed to relieve her. In despair, the girl's father sought the advice of a so-called "wonder-doctor." Under his herb treatment the minor convulsions decreased in number but the severe attacks persisted. Another charlatan was consulted, under whose treatment the patient grew rapidly worse. At this juncture Dr. Bodon was called in. The family history revealed no hereditary tendencies to nervousness, nor was there any history of alcoholism. The patient had never suffered from convulsions during infancy or at the period of dentition. She was well developed and well nourished.

The patient was advised to desist from all treatment for two weeks. During this period she had three severe epileptic seizures, and from two to five of the lesser attacks daily. In these milder convulsions she generally screamed, fell on her left side, but without loss of consciousness, and arose quickly as if nothing had happened. Owing to the fact that the disease first appeared at the beginning of menstruation, and that the patient was free from any other constitutional disease the writer determined to try "ovarine." The treatment was commenced on June 19, and from that period until August 9 the patient had not one severe epileptic seizure. From July 29 to August 9 the use of bromides was combined with the ovarine treatment. Owing to difficulty in securing a sufficient supply of the "ovarine" tablets, the number was reduced on August 9 from eight to four daily, with the result that the convulsions be-

gan again in spite of the bromides. August 18 the larger doses of "ovarine" were taken and the bromides discontinued, and up to the time of writing (September 10) there had been no serious attacks. The menstrual flow became more abundant and continued longer at each period, while the stomach was not disturbed at all by the "ovarine" treatment. The writer has the case still under observation and treatment, and is encouraged to hope that "ovarine" may prove of great assistance in this and similar cases, arising from troubles incident to menstruation.

Mexico.

Two Interesting Laparotomies.

N. San Juan (*Gaceta Med. de Mexico*, December 1, 1896), reports the following cases: The first was a woman forty-four years old, sent to be operated on for a supposed ovarian cyst. For five years she had observed in the lower part of the abdomen a soft tumor, which had gradually and continuously increased in size; during this time heavy exertion had caused pain, accompanied by nausea and fever. Examination showed a large abdomen, tender at the sides on pressure; and a tumor, immobile and adherent to the anterior abdominal wall, its long diameter in the median line, its upper limit in the epigastric region; its lower part had no pedicle and was lost in the pelvis; it was dull on percussion, doughy at the sides, fluctuating in the middle; it was separate from the uterus and apparently from the appendages; puncture gave an opaque fluid that coagulated with heat. The intestinal functions were good, but there were nausea, anorexia, emaciation, frequent pulse and an evening temperature of 38.8° C. Under treatment the general and local conditions improved, but the tumor remained firmly adherent to the abdominal wall. Laparotomy was then performed, and revealed a neoplasm so firmly adherent to the abdominal wall that separation at first seemed impracticable. It was necessary to resect large parts of the omentum until finally there remained only the adhesions between the tumor and the ascending and descending colons and the right iliac fossa; the former were real aponeurotic plates, and the last was as resistant as cartilaginous tissue. The tumor was then emptied with a trocar and nearly four litres of a thick, coagulable, lemon-colored fluid were obtained. Many vessels had to be ligated and the tumor was extracted with difficulty. No connection of the neoplasm with the internal genitals could be made out; the large fibrous pedicle which arose from the sigmoid was formed by the

fusion and condensation of sundry fatty appendages of this portion of the intestine; while a number of small neoplasms of the same cystic formation as the main tumor depended from the lower part of the descending colon. The weight of the tumor, including the liquid, was nine pounds. The patient made a good recovery.

The tumor, on section, presented an unequal consistency, some parts, preferably near the surface, being real calcareous plates; other parts were of a gelatinous appearance, and from these a thick, mucoid liquid could be expressed; that in places appeared to be enclosed in small cavities and in other places to be diffused in the tissue. Microscopically, the superficial parts were found to be of dense, small-celled connective tissue; in the calcified parts the concretions were between the bundles; near the gelatinous parts the tissue seemed to be disintegrating, and its fasciculæ separating, while in these parts the bundles were widely separated, the interstices being filled with liquid and a few small irregular cells. No where could anything like epithelial tissue be found. The pathological diagnosis of fibromyoma was thus arrived at; the growth had evidently proceeded from the fatty appendages at the union of the descending colon with the sigmoid flexure.

The second case was a woman fifty-three years old, a virgin, in whom menstruation had been suspended in the twenty-ninth year; two years later an abdominal tumor had appeared, which grew gradually; while for the last four years she had had bloody discharges. The patient was constipated and emaciated and could not walk without fatigue. On examination the case was diagnosed as an old fibrocystoma of the left ovary without adhesions to the abdominal wall; there was also a stenosis of the cervix. An abdominal incision was made from the pubes to the umbilicus, and immediately continued to a point seven centimeters above the latter; the tumor was found free on its anterior surface, but adherent posteriorly to the abdominal viscera. The cystic part was emptied of nine quarts of fluid. Great portions of the omentum had to be resected, so literally confounded with it was the tumor. The tumor and jejunum so firmly adhered together that the intestine appeared to penetrate into the hard part of the neoplasm, its direction being towards the under and left parts of the tumor, whence it ran between the large lobes of the same; moreover the mesentery of this part of the intestine firmly bound down the under surface of the tumor, and was besides extremely vascular. In view of this complication, the large pedicle of the tumor was clamped with a Billroth's clamp and divided. The tumor was then inverted upon the patient's chest and the intestine literally carved from its posterior surface. It was

found that the gut had been cut in two places; also that the under surface that had been in connection with the enclosing channel of the fibroma had in place of the serous covering a plate of apparently erectile tissue. It was decided to unfold the right leaf of the mesentery to cover this part of the intestine; the edges of the mucous membrane at the holes were joined with interrupted sutures, the knots towards the intestinal canal; then the new layer from the mesentery was sewn to what remained of the serous covering of the intestine. The tumor was then removed, and its weight, together with that of the liquid, was found to be twenty-nine and a half pounds. The patient's recovery was uneventful.

A. D. Chaffee.

OBSTETRICS.

British India.

Criminal Abortion in the Punjab.

Charles H. Bedford (*Edin. Med. Jour.*, November, 1896), reports twenty-four fatal cases of criminal abortion, occurring during the year he was Chemical Examiner for the Punjab Government, viz.: from November, 1893, to November, 1894. Only fatal cases come to the notice of the police, and many such escape notice, owing to the fact that, among the Hindu, death from septic fever is attributed to malarial fever, and the body wholly incinerated or partly burned and thrown into the nearest large river and consumed by alligators, before legal steps can be taken, where suspicion exists. Doubtless large numbers so die without suspicion. In the case of Mohamedans the body can be disinterred. Criminal abortion is practised less among married women than single, but chiefly among widows, who are debarred by social custom from remarrying, when they find themselves pregnant. Among the Mohamedans abortion is less frequent than among the Hindus, due largely no doubt to the fact that no custom prevents their widows from remarrying.

Period of Gestation.—Of the twenty-four cases reported, 33.3 per cent. were at the fourth month, 20 per cent. at the fifth month, 16.6 per cent. at the third month, and 4 per cent. at the sixth month. Local measures are used more often than constitutional, owing to their greater certainty. Gross ignorance of anatomy and the like render such measures dangerous.

Local Measures.—The most common method is the introduction into the os uteri of some irritant twig or bougie (medicated), or the application to the cervix of irritant substances in the form of a paste, by the finger or on cotton, etc.

Abortifacients Employed.—Nutmeg, opium, arsenic, carbonate of sodium, pepper, mercury, croton, aloes, alum, saffron, jequirity, sulphate of copper, red lead, the juice of the Marking nut (a violent vesicant). A juice known as "ak" (calotropis gigantea). The twigs are generally of oleander (Nerium odorum), a powerful spinal and cardiac poison. These twigs are either dipped into or smeared with the abortifacient, or the twig may be wrapped in cotton and then medicated. These are introduced into the cervical canal, one or more in succession, or several may be inserted, one at a time, until a number are introduced, thus dilating the canal, when a finger can be inserted and the membranes ruptured; or the medicated bougie left *in situ*. Cotton or other absorbent material, may be saturated with the medicant, and introduced into the vagina and against the cervix. This method is, of course, less certain in producing abortion, often resulting in ulceration and sloughing.

Nutmeg is the drug most often used; its irritant action depending on a solid glyceride of myristic acid and the terpene and myristicol (an oxygenated oil) which chiefly form its volatile oil.

General or Constitutional Measures.—Mercury, arsenic, pepper, aconite, opium, and nutmeg. Many of these are taken with suicidal intent or through ignorance, at the advice of others.

Purgatives.—Gamboge, aloes, croton seeds, calomel, etc. These of course are uncertain abortifacients, their action is rendered more certain by the habit of vigorously "shampooing" the abdomen after their administration.

Irritants, Stimulants and Astringents.—Garlic, cardamums, asafœtida, alum, and a decoction of Luffa echinata, which cause severe nausea and vomiting, and dilatation of the cervix; arsenic, saffron and "san" (Crotalaria juncea).

Causes of Death.—Septicæmia, peritonitis, perforation of the uterus, toxic effect of drugs used, as opium, etc.

Signs of Mechanical Injury.—Vaginitis, endometritis, lacerations, sloughing, perforation of the uterine wall, complete or partial; twigs called "batti" present in the uterus, or forced through it into the peritoneal cavity; this is usually done by the contractions of the uterine wall, after the expulsion of the fœtus, the "battis" remaining behind.

A detailed account is given of each of the twenty-four fatal cases reported.

Germany.

Pregnancy, with nearly Complete Occlusion of Hymen, Complicated by Nephritis and Premature Detachment of the Placenta.

Dr. Rudolf Köstlin, of Halle, (*Munch. Med. Woch.*, November 24, 1896), says that notwithstanding the opinion of Zweifel and Hoehl that reports of cases of imperforate hymen are of little practical value, he wishes to report a case observed by himself.

Moderate constriction of the vaginal entrance by a resistent hymen is not rare, but cases where the hymen is not distended by repeated cohabitation, and parturition is prevented are unusual. Out of 28,000 parturitions Hyernaux reports only one case. This anomaly is interesting from a legal as well as a medical standpoint, but that aspect of the subject cannot be touched upon here.

The case was that of a woman thirty-six years old, who, during infancy had suffered from convulsions, but otherwise had always been healthy. There was no history of infectious disease or inflammation of the vagina. Menstruation commenced at fifteen, regular and fairly abundant, of the four-weekly type. She suffered at the menstrual period from pains in the abdomen and lumbar region and a disagreeable feeling of pressure on the perinæum and rectum. Defæcation and urination regular and painless. In her sixteenth year she went to a doctor, who told her she needed a slight operation later on. In January, 1896, the woman married. Cohabitation was painless and apparently natural. Conception soon took place. Fœtal movements were felt about the middle of June and continued until about the 18th of August. On August 20 the patient noticed swelling of the ankles, which soon extended to the legs and thighs; this was accompanied by nausea, vomiting and fever, but no headache or scintillations. Urine became darker and less in quantity, while walking was very difficult. On August 25 the patient had a hæmorrhage from the vagina, followed by the same feeling of pressure as when menstruating. She sent for a midwife, who, though unusually intelligent for her class, failed to understand the case. She found no vagina, but only a small opening from which blood exuded, and which she took to be the prolapsed uterus, and so sent for assistance to the polyclinic.

On Dr. Köstlin's arrival he found the patient well nourished but anæmic. Heart and lungs normal, abdomen and limbs swollen. Abdomen very fat. The pulse was small and frequent. Urine dark and scanty, containing 2 per cent. of albumen and some granular casts. External palpation showed the fœtal head presenting above the brim of the pelvis. The extreme fat and œdema of the abdo-

men, together with the distension of the uterus by the accumulation of blood rendered this examination difficult. The fœtal heart was heard, 124 per minute. The vulva was closed, but on separating the labia minora, a rose-colored tumor presented itself, covered with mucous membrane, which passed upward into the urethral convolution, occupying toward the right about one-third of the labia minora, and toward the left uniting with the base of the latter. There was perceptible fluctuation. On the left side, on the border between the upper and median third, there was an opening about one millimeter large from which, on pressure on the posterior surface, dark, liquid blood came in jets. The hymen could be pushed back by the finger about 8 c.m. into the vagina, bringing the opening opposite the point of the finger. In this way conception was easily explained.

A diagnosis of nephritis with premature detachment of the placenta was made, and as so much blood had accumulated behind the hymen it was necessary to enlarge the opening to allow of the escape of the blood and to render a better examination of the uterus possible. The hymen was very fleshy, about 3 mm. thick. After a crosswise incision two clots of blood about the size of a small fist were removed, together with some more dark, liquid blood. There was considerable hæmorrhage, but it was easily stopped, by surrounding the wound surface with a continuous catgut suture and exerting pressure with gauze pads. The operation was without narcosis and nearly painless. A dressing of iodoform gauze was applied. Two days later the condition was good, very little flow of blood from the vagina. The fœtal heart sounds could no longer be heard. The treatment since the day of operation consisted of wet swathing of the whole body, a milk diet, and Seltzer water.

On Aug. 30, at 6 P. M., strong labor pains set in and about three hours later the membranes ruptured and a macerated fœtus was born. The delivery was without assistance, and there was no injury to the perinæum. The puerperium was without fever and uneventful. On the 9th of September the œdema had disappeared; the urine was free from casts and albumen, and of the hymen only small well-cicatrized caruncles remain.

As to the time of operation, all authors except von Guerard recommend waiting for the expulsive period of parturition. Ahlfeld believes that the incision should be made when the head is pressing forward, and says that as a rule the head pressure will stop the hæmorrhage—occasionally some slight surgical attention is needed afterwards. In some cases, however, where the head is high, the hymen must be distended or destroyed before parturition can occur.

Von Guerard reported five cases. In two cases the incision was

made during parturition, once so late that the fœtus was dead. In a third case the operation was performed earlier on account of abortion. In the fourth case the patient had previously had two slight operations, but on account of severe pain in the genitals, especially during coitus, the hymen was excised during the third month of pregnancy, and parturition afterwards was normal.

In a case reported by Zinstag there was complete occlusion of the hymen without the least opening. Credé reports a case similar to the writer's in which hæmorrhages occurred two weeks before the parturition.

The writer thinks that where the patient is seen before labor commences, at any period during pregnancy, an attempt should be made to dilate the hymen with the fingers, and if this is not possible an early operation is recommended. Achenbach objects to this on the ground of the possible formation of cicatricial tissue, causing an impediment to delivery, but this may be prevented by suturing the borders of the wound. His objection on the ground of the danger from hæmorrhage is hardly tenable, as the time can be chosen for an earlier operation and preparations made for arresting hæmorrhages, which, however, in the writer's experience, have never caused inconvenience. An earlier operation, moreover, leaves everything in better condition for careful examination at the time of delivery, preventing delays and thus rendering the risk to the mother and child much less. The injuries to the surrounding parts, which may result from forcible rupture of the hymen during delivery are also avoided.

Another question which deserves consideration is sexual intercourse, which in cases of occlusion of the hymen is sometimes almost impossible, and almost always attended with inconvenience and pain.

Zweifel's claim that an occluded hymen never seriously interferes with delivery is disproved by Achenbach's statement that in twenty-five cases incisions had to be made in sixteen; and the forceps used in five. In the case above reported it would hardly seem possible that the macerated skull could ever have broken the thick hymen.

Italy.

Fatty Degeneration of the Uterus During Pregnancy.

L. M. Bossi, of Novara (*Annali di Ostet e Gin.*, December, 1896), gives the results of his researches in both human uteri and those of animals for fatty degeneration of the uterus during gravidity.

First Case.—Primipara in the eighth month of gestation with a

fibromyoma of the anterior wall of the uterus which, owing to its size and location, caused such distressing symptoms that a Cæsarean section was performed with favorable results to the mother and child (November 6, 1894,) the uterus being entirely removed. Small portions were taken from various portions of the *posterior* wall of the uterus, which showed no trace of fibromyoma.

Second Case. A woman at term, whose severe hæmorrhage from rupture of the uterus required immediate removal of the uterus by vagina (April 8, 1896).

Third Case was that of a uterus removed by Cæsarean section during the last week of gestation for osteomalacia of the pelvis (May 6, 1896).

Histological Methods adopted. Sections taken from various portions of the uterine walls and from various layers were divided into small fragments and immersed in a mixture of Müller's fluid and osmic acid. Some pieces were further subdivided, preceeded by coloration with aluminous carmine, some while entire and others after the subdivision. Still other pieces were after complete hardening colored in the mass and enclosed in rubber for study in sections to avoid the possibility of the fat being dissolved in the liquids. Osmic acid was chosen to render the shiny spheres observed at a preliminary examination in the muscular fibro-cells, blackish as a proof of their being fat.

Histological Results.—The examination of the small subdivided pieces, made it at once clear that, in all three uteri the fasciæ of the smooth muscular fibres had undergone adipose degeneration, adipose fragments in the muscular fibro-cells were prominent on account of their intensely black coloration. Careful study showed all the phases of the process from the initial stage to complete destruction of the muscular fibres. The muscular fibres in complete destruction were limited in number in the different pieces taken from various regions, showing that the process was not far advanced. Among the numerous fibro-cells completely normal there were also found many which compared with the firmer and slightly enlarged, having a normal nucleus intensely carmine colored, but in their contractible substance constituting the major part of the cellular body, a more or less large number of small black spheres were seen, which, if their number were large, were disposed to arrange themselves in linear series. These initial stages demonstrate that, just as in striated muscular fibres, the fatty degeneration attacks the contractile substance, and that the primitive fragments, even in the smooth muscular fibres, assume a linear series and a rather uniform thickness. These adipose fragments must, in a

more advanced stage be dissolved, because there were fibro-cells found which contain an increasing number of large black fragments. The fibro-cells containing large fragments have a nucleus which is either very slightly colored or not at all. In the latter case the contours of the nucleus are irregular, depressed toward the neighboring fragments, which compress it, and the nuclear yellowish contents appear rarified. The cellular contours are seen very indistinctly in the fragments of tissue because of the difficulty of finding isolated cells. There were also fragments of tissue found containing fusiform, elongated bodies, without nucleus and formed by accumulations of large and small adipose fragments, which, by their conformation and disposition, must be fibro-muscular cells in a very advanced state of degeneration. These bodies are only found in limited number. The tissue which encloses them is either finely fibrillar or thickly granular, studded with adipose fragments and infiltrated with a variable number of leucocytes which enclose in their protoplasm black drops. Some fragments were found formed by a granulous matter, partly striated, in which there are irregular accumulations of adipose droplets, and a great number of leucocytes surcharged with adipose droplets.

Examinations of the *sections* made with the microtome, the same results were obtained, and it was seen how the degeneration is irregularly distributed in the bundles of fibro-cells, in such a manner that immediate to a bundle in which the degeneration is very far advanced there are many others in which it is very little so, and broad tracts although rare and small, in which there are few traces of muscular tissue, but containing a thick infiltration of leucocytes from the shapeless accumulation of the thick black droplets. It is thus beyond doubt that in these three uteri the process of fatty degeneration was already initiated, though the process was as yet but little advanced and diffused.

Experiments on Animals.—Pregnant bitches and rabbits were selected. The abdomen was opened; as the seat of the fœtus was generally found in the cornua, he selected the one containing the smaller number, and at equal distance from both, three (3) centimeters from the implantation in the corpus; a silk ligature was inserted and the part on the outer side of the ligature was excised. The other cornu, with the corpus, was replaced in the abdomen and the peritoneum sutured, with the intent that the pregnancy might go on to term. But either the fœtus died or was expelled subsequently. Examination of the cornu extracted, following the same method as in the human uteri, showed in two bitches, at term, fatty degeneration of the fibres, but no signs of fatty degeneration could be detected in the

uteri of the rabbits; but none of the rabbits were beyond the middle of gestation. He concludes that

First. In the three human uteri, one at the eighth month and two at term, the process of fatty degeneration was evidently demonstrated.

Second. That as he had not opportunity to make any other observations on human uteri, he asks if it is an accepted physiological fact of which he had no knowledge until now, that fatty degeneration is initiated during gestation or in its last two months?

Third. As the *rapidity* of normal involution in woman is accepted as a wonderful phenomenon not easily explained, may it not be that this surprising rapidity of involution is due to the process of fatty degeneration being initiated during the latter part of gestation and not wholly after delivery?

Fourth. Admitting this new phenomenon, what influence could be exercised by the existence of this process in the fibres of the uterus, in regard to the period immediately preceding parturition? Could not this process, if far advanced and diffused, account for many cases of uterine inertia?

Fifth. These arguments and conclusions are in this respect premature and inconclusive. Investigation in this line should be carried on on a large scale. The results from animals may not be applicable to human uteri. (Histological diagrams are given with explanations).

Russia.

Two Parturitions of Triplets.

Mark Gerschun, of Kiew (*Centralbl. f. Gyn.*, December 26, 1896), reports two cases of triplets occurring in the course of ten days at the Alexander Hospital in Kiew. He gives the frequency of triplets according to *G. Veit* as one case in 7,910 parturitions; according to *P. Duboise* the proportion is 1 to 6,209; according to *Pucch* 1 to 6,500; in Prussia one case occurs in 4,045 parturitions; in Ireland one in 4,995; in Wurtemberg one in 5,464; in France one in 8,256 parturitions.

In the majority of cases the infants are of different sexes. According to *G. Veit* the children in 1,689 parturitions of triplets were in

921 cases of different sexes..... { 501 cases { 2 boys. 1 girl. / 419 cases { 1 boy. 2 girls.

768 cases of the same sex..... { 409 cases, 3 boys. / 359 cases, 3 girls.

Triplets are developed either from one ovum, and in this case have a single placenta, a single chorion and may have even a single amnion. Two of these cases have been published by *Credé* and by *Winckel.* They may also be developed from two ova, and in this case there may be two placentæ, but two fœtus in one chorion, or only two choria; and finally they may be developed from three ova and each fœtus may have its own proper placenta, but must have its own chorion and amnion. In the majority of cases, according to *Pucch*, in twenty-seven out of fifty cases, there exists only one placenta; out of the other twenty-three cases, in fifteen there were two and only in eight there were three placentæ.

History of the two cases reported:

Case I., a xii-para aged thirty years. First child born eighteen years ago; the last two years ago; four years ago she was delivered of twins. On admission her abdominal circumference on a level with the umbilicus was 113 centimeters, above the umbilicus 116 centimeters, below 119 centimeters. Pelvic dimensions: 30, 25, 27, 18.5, 11.8. Many small parts were felt through the abdominal wall. September 14, 1896, 5 P. M. labor began, at 11.25 P. M. membrane ruptured and a female child was delivered by breech presentation. After an hour and a half labor pain recommenced, at 12.35 A. M. membrane was ruptured and a second female child was extracted after version. Examination revealed a third fœtus, and a third membrane was ruptured and child turned and extracted; the last two children were vertex presentations. The placenta was expelled by Credé's method on account of hæmorrhage. The first child, a girl, 40 centimeters long, weighing 600 grammes, lived 24 hours; the second, a girl, 44 centimeters long, weighing 1,900 grammes, lived 2 days; the third, a boy, 44 centimeters long, weighing 2,000 grammes, survived. The placenta weighed 970 grammes, consisted of two connected placentæ, a common chorion, and three separate amnia. The mother and boy left the hospital on the sixteenth day afterwards.

Case II., a ix-para aged thirty years. First confinement fourteen years ago; last two years ago; all normal except two abortions, one at the third month and the other at the second month, eight and four years ago respectively. Since the third month of the present gestation she had suffered from dyspepsia and palpitation of the heart, great enlargement of the abdomen, œdema of the legs. On admission abdominal circumference on the level of the umbilicus 107 centimeters, above 110 centimeters and 102 centimeters below. Pelvic measurements: 30, 26, 28, 20, 12. Marked fluctuation of the abdomen and great distention. No fœtal heart sounds audible

and no fœtus could be felt externally. Vaginal examination showed small fœtal parts. She was considered to be six months pregnant with twins and acute hydraminos of the second twin. After five days the abdominal distention increased four centimeters, dyspnœa and cardiac palpitation also increased so that her condition was considered critical. Labor was induced by the introduction of Barnes' bags, August 25, 1896. After an hour labor pains began, at 3:15 A. M. of the 26th, the membrane ruptured and in a few minutes a male child was delivered by breech presentation; as the labor pains diminished at 8 A. M. the second bag of membranes was ruptured by the fingers; the hand filling the vagina only part of the water escaped. A bandage about the abdomen was tightened. About twelve liters of liquor amnii were discharged slowly. Podalic version was done and a second male fœtus extracted. A third membrane was found and ruptured, version done and a third male fœtus extracted. The first boy 24 centimeters long, weighing 500 grammes, lived half an hour, the second boy, 26 centimeters long, weighing 600 grammes, lived fifteen minutes, and the third boy, 22 centimetres long, weighing 700 grammes, lived about an hour. The placenta weighed 1,000 grammes and consisted of two connected placentæ, a common chorion and three amnia.

T. W. Cleaveland.

PEDIATRICS.

United States.

Report on the Collective Investigation of the Antitoxin Treatment of Laryngeal Diphtheria in Private Practice.

(*The American Pediatric Society*, May 4, 1897.)

In this second and supplementary investigation, the aim has been to ascertain: (1) What percentage of cases of laryngeal diphtheria recover without operation under antitoxin treatment. (2) What percentage of operated cases recover. The report now submitted may properly be limited to answering these two inquiries.

Since the beginning of the general use of intubation, no disease has been more thoroughly observed and more fully reported than laryngeal diphtheria. Operative cases, especially, whether ending fatally or favorably, have been fully and promptly put on record. The result has been a collection and tabulation of cases available for control, such as few diseases offer. There are thousands of intubation cases before the days of antitoxin, and thousands since,

available for comparison. It is, then, to cases of laryngeal diphtheria, especially those requiring operative interference, that we may apply the crucial test of the value of the antitoxin treatment.

Sixty thousand circulars containing the following questions have been distributed:

Age of patient?

Diagnosis confirmed by: (1) Presence of other cases in the family? (2) Appearance of membrane elsewhere? (3) Bacteriological cultures?

How many days and parts of a day after the first appearance of the disease was antitoxin first administered?

How many doses of antitoxin were administered?

Dose of each injection in antitoxin units?

Whose antitoxin used?

Non-operative cases—evidence of disease: Hoarseness? Aphonia? Stenosis?

Operative cases: (1) Intubation? On what day? (2) Tracheotomy? On what day?

How long, in days and fractions of a day, was the tube in the larynx or trachea?

Sequelæ (in recoveries): (1) Broncho-pneumonia? (2) Paralysis? (3) Nephritis?

Death, cause of, and on what day? (1) Broncho-pneumonia? (2) Extension of membrane to the bronchi? (3) Sudden heart paralysis? (4) Nephritis? (5) Sepsis? (6) Accidents of operation?

Recovery?

Remarks, especially on fatal cases?

These circulars were distributed throughout the United States and Canada, the following means being employed: contributors to first report, members of the society acting as agents for their respective localities, boards of health, local medical societies and antitoxin manufacturers. At the outset, in this connection it is a pleasure to acknowledge that the labors of the committee have been much lightened by the uniform good-will of all addressed, more aid coming spontaneously than in the previous investigation. It is also a pleasure to especially acknowledge the society's indebtedness for efficient aid in distributing circulars and securing returns of H. K. Mulford Co., Parke, Davis & Co., Lehn & Fink (Gibier's), the Health Departments of Chicago, St. Louis, New Orleans, Denver, San Francisco, Boston, Washington, Buffalo, Providence, Ann Arbor, Newark, Montreal, Toronto and others.

To the New York Health Department are due the thanks of the society for every possible courtesy in distributing blanks and, through their inspectors, of securing returns of operative cases.

In order to reduce sources of error it was desirable to bring to-

gether a large number of cases, from widely distributed localities, from many different observers and operators, and for a period of time including all seasons of the year. All returns have been examined by the committee, and only such cases accepted as bore satisfactory evidence that they were first of all diphtheria, and secondly that the lesion had invaded the larynx.

A total of 1,704 cases of laryngeal diphtheria are ours for present study. A few cases (228) had not satisfactory evidence that there was laryngeal involvement; indeed, some were reported through misunderstanding the fact that only laryngeal cases were wanted, and a few were reported in which there was no mention that antitoxin was used. These cases are, of course, not included in the number referred to above. Of the 228 cases, 218 recovered; 10 died.

In a total of 1,704 antitoxin-treated cases of laryngeal diphtheria, there was a mortality of 21.12 per cent. (360 deaths).

TABLE OF ALL CASES SHOWING AGE AND RESULT OF TREATMENT.

	Fatal.	Recov.	Totals.	Mortality.
1 year and under	25	35	60	41.66 per cent.
1 to 2 years	77	219	296	26.01 "
2 to 3 years	81	260	341	23.75 "
3 to 4 years	42	216	258	16.27 "
4 to 5 years	47	160	207	22.70 "
5 to 10 years	72	345	417	17.26 "
10 to 15 years	9	64	73	12.32 "
15 to 20 years	2	24	26	7.65 "
Over 20 years	5	17	22	22.72 "
Unknown	0	4	4	.... "
	360	1,344	1,704	21.12 "

CASES NOT OPERATED ON.

The first inquiry of the circular was what percentage of cases of laryngeal diphtheria recover without operation under antitoxin treatment.

Of 1,704 total cases, 1,036 were not operated upon (60.79 per cent). Of these, most did not require operative interference; a few cases were thought to require it, but operation was refused. All cases are included, and it will be noted there are no eliminations.

Among the 1,036 cases not operated on, there was a mortality of 17.18 per cent. (deaths 178) or, to answer the inquiry of the circular exactly, of 1,036 cases not operated on, 82.82 per cent. recovered (or 858 cases).

Good as is this percentage of recovery in so large a number of

cases of diphtheria of the severest type, it is believed it is not as good as it ought to be. Cases of laryngeal diphtheria not requiring operation, according to the testimony of consulting intubationists, are seldom heard from a second time, and less often find their way into reports. It was formerly estimated that about ten per cent. of cases of laryngeal diphtheria recovered without operation. The present report shows that in 1,036 cases, 82.82 per cent. recovered.

CASES OPERATED UPON.

In analyzing this class of cases, it is believed a more exact conclusion as to the value of the antitoxin treatment can be arrived at than in the non-operative.

There will be entire harmony of opinion as to the severity of laryngeal diphtheria which requires operative interference. In the early days of intubation it was customary to speak of the percentage of recoveries, and 25 per cent. and 27 per cent. were considered good results. In the last report the recoveries had crept up so high in the one hundred cases, that it seemed more natural to speak of the percentage of mortality.

In this connection, it is interesting to inquire what were the best reliable statistics of intubation, taking cases as they occurred, without selection, in pre-antitoxin days. In 5,546 intubation cases collected by McNaughton and Maddren in 1892, the mortality was 69.5 per cent., or, to bring the facts into line, 30.5 per cent. recovered.

O'Dwyer's personal experience, in private consultation, brings us more clearly face to face with the old-time experience with diphtheria. Note that the following 500 cases came under the observation and care of one practitioner, a skilled operator, extended over a dozen years of time, and therefore included all types of the disease.

Exclusive of the first 100 cases of intubation, which he (O'Dwyer) regards as experimental, the results stand as follows:

	Per cent. of Recoveries.
Second 100 intubations	27
Third 100 "	30
Fourth 100 "	26
Fifth 100 " (which only reached 70)	27

Total percentage of *recovery*, 27.56 per cent. When he had reached 70 on the fifth hundred something occurred which carried the phraseology up over the divide so that it was appropriate to speak of percentage of *mortality*. At this point in history, antitoxin arrived and interrupted forever the old series. In O'Dwyer's next 59 cases the *mortality* was 14 deaths, or 23.7 per cent.

In a total of 1,704 laryngeal cases there were 668 cases operated upon. In the 668 there were 182 deaths, or a mortality of 27.24 per cent. In the former report, in 553 intubated cases the mortality was 25.9 per cent. In approximate figures there is a difference between 27¼ per cent. and 26 per cent.

SUMMARY.

Sixty thousand circulars were distributed throughout the United States and Canada.

Time allowance, the eleven months ending April 1, 1897.

Whole number of cases in this report, 1,704; mortality, 21.12 per cent. (360 deaths).

The cases occurred in the practice of 422 physicians in the United States and Canada.

Operations employed: (*a*) Intubation in 637 cases; mortality, 26.05 per cent. (166 deaths). (*b*) Tracheotomy in 20 cases; mortality, 45 per cent. (9 deaths). (*c*) Intubation and tracheotomy in 11 cases; mortality, 63.63 per cent. (7 deaths).

Number of States represented, 22, the District of Columbia and Canada.

Non-operated cases, 1,036, 60.79 per cent. of all cases; mortality, 17.18 per cent. (178 deaths).

Operated cases, 668, or 39.21 per cent. of all cases; mortality, 27.24 per cent. (182 deaths). Two facts may be recalled in connection with this paragraph. First, that before the use of antitoxin it was estimated that 90 per cent. of laryngeal diphtheria cases required operation, whereas, now, with the use of antitoxin, 39.21 per cent. require it. Second, that the percentage figures have been reversed, formerly 27 per cent. approximately representing the recoveries, while now, under antitoxin treatment, 27 represents the mortality. To put it in other words, before the use of antitoxin, 27 per cent. recovered, now 73 per cent. recover, and this in the severest type of diphtheria.

The present report will strike many members of the society as revealing a mortality a little too large in each of the two classes. The mortality is large, larger than the personal experience in private practice of many would expect.

The reasons for this are (1) that antitoxin is still used too late, either from procrastination on the part of the physician, or objection on the part of the friends; or (2) in a half-hearted way which shows itself in doses from one-tenth to one-fourth as large as they should be. In truth, both the physicians and the friends of the patient are timid.

This report, it must be admitted, shows too large a mortality. In the opinion of the committee it is a larger mortality than will ever be shown again. Antitoxin is gradually being used earlier in the disease, and it will soon be used in sufficient doses.

To the society, the committee desire to say that they have sought to carry out their wishes in putting antitoxin on trial, to accept no testimony that did not bear the stamp of reliability, that they have employed the methods approved in the case of the first investigation and report, and that they have confined their work to definitely answering the main questions which the society and profession now have in mind. Points that were settled in the first report and have since been corroborated by general medical literature, are not again taken up.

If the committee are asked to put forth the three most valuable points established in this eleven months' work, they are:

First. The mortality of laryngeal diphtheria at present rests at 21.12 per cent.

Second. That 60 per cent. approximately have not required intubation.

Third. That the mortality of operated cases is at present 27.24 per cent.

W. P. Northrup, M.D.
Joseph O'Dwyer, M.D.
L. Emmett Holt, M.D.
Samuel S. Adams, M.D.
Committee.

THE COMMITTEE RECOMMEND:

Antitoxin should be given at the earliest possible moment in all cases of suspected diphtheria.

Quality.—Of the products on the market, some have, by test, been found to contain one-half to one-third the antitoxin units stated on the label. Select the most concentrated strength of an absolutely reliable preparation.

Dosage.—All cases of laryngeal diphtheria, the patient being two years of age or over, should receive as follows:

First dose—2,000 units at the earliest possible moment.

Second dose—2,000 units, twelve to eighteen hours after the first dose, if there is no improvement in symptoms.

Third dose—2,000 units, twenty-four hours after the second dose, if there is still no improvement in symptoms.

Patients under two years of age should receive 1,000 to 1,500 units, the doses to be repeated as above.

NEW INSTRUMENTS.

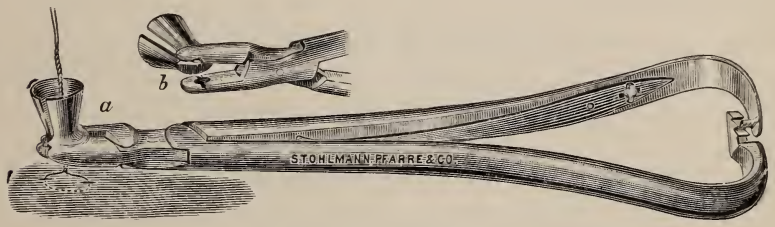
A New Shot Adjuster.

By Victor Neesen, M.D.

Late House Surgeon at the Woman's Hospital in the State of New York; Assistant to the Chair of Gynecology at the Long Island College Hospital.

To a great many of the so-called modern gynæcologists who have discarded many of the methods of the old masters, this instrument will not appeal. But to those who still follow Dr. Thomas Addis Emmet's method of repairing the posterior vaginal wall, it may prove of interest and of service.

During the period in which the writer assisted Dr. Emmet in his operations at the Woman's Hospital, it occurred to him that if the little perforated shot, which are put on the free ends of the silver wire after the completion of the operation, could be adjusted and



squeezed with one instrument instead of two, as theretofore had been the custom, it would save time and patience.

After much difficulty, which at one time appeared like impossibility, the instrument to be described was evolved. In thinking out the instrument three things had to be accounted for: Holding the shot for its application on the wire, pinching it, and releasing it. These three things are now accomplished by a squeeze of the hand.

The head of the instrument is made narrow and each blade contains a shallow cup. On one of the blades a funnel is fastened, so that the hole in it will come directly over the middle of the hollow caused by the shallow cups when the blades are coapted. In the end of the funnel, extending its entire length, is a slit, which is to release the wire after compression of the shot. The handle of the instrument swells out to fit in the grasp of the fingers and palm.

The method of tightening and release is the mechanism of the Dixie-Crosby handle. To hold the shot ready for adjustment one click is all that is necessary. Further squeezing compresses the shot, and still further squeezing releases the instrument, the wire finding clearance through the slit in the funnel.

In order to facilitate the grasping of the shot by the instrument, they are strung on a wire loop like beads, and the instrument takes them directly from the wire.

In the cut the adjuster is upside down. The funnel should go on the wire first, its object being to direct the end of the wire into the perforation of the shot. Stohlmann, Ffarre & Co., of New York, are the makers.

220 Sixth avenue, Brooklyn.

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