Bryant (Geo. S.)

REPORT OF THE COMMITTEE

ON

GYNÆCOLOGY.

BY GEORGE SYNG BRYANT, M. D.,
Chairman, Lexington, Ky.

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WITH a normal pelvis in view, it is not difficult to understand that Sims' speculum, or some modification of it, exposes more of the vagina and enables the operator to get more thorough and easy access to the os and the cavities of the cervix and body of the uterus, than any other speculum now in use.

The posterior commissure with the perineum, by any of these specula is easily carried back to the point, or lower end of the coccyx, and with a volcella or hook attached to the anterior lip of the cervix, it is possible to drag the os uteri quite down to the vulva, should it ever be necessary.

The antero-posterior diameter of the superior strait is about the same as that of the inferior strait, if the measurement be made from the sub-pubic ligament to the lower end, or apex of the sacrum. Both these diameters are about four inches.. The diameter from the arch of the pubis to the point of the coccyx, is about three-quarters of an inch less. But the flexibility of the coccygeal articulations is sufficient to allow the lower end of the coccyx to be carried back about one inch.

A line drawn from the promontory of the sacrum to the lower end, or coccygeal extremity, will show the excavation to be about three-quarters of an inch deep; thus giving greater capacity to the excavation of the pelvis than at either strait.

The viscera of the pelvis are composed of the rectum, uterus, vagina, fallopian tubes, ovaries, bladder and urethra bound together by the pelvic ligaments. Many folds of the small intestines are lodged in the Douglas cul-de-sac and in the utero-vesical pouch, or cul-de-sac within the cavity of the pelvis.

The uterus is situated about the center of the pelvis. It is in front of the rectum, except at the very lowest extremity, and at

that point it is above it. It is behind and somewhat above the bladder, and it is above the upper portion of the vagina. The bladder and urethra are also above the vagina.

The uterus and bladder are below the small intestines, which, as before stated, occupy the upper portion of the pelvic excavation.

The axis of the womb is about that of the superior strait, with the fundus looking upward and forward, and the os downward and backward.

When the rectum and bladder are both in the normal condition, that is, not distended with fecal matter and gas or urine, the fundus of the uterus will look to a point about midway between the pubis and umbilicus, and the os uteri will look about to the last articulation of the coccyx.

The virgin womb is not straight, but is bent slightly upon itself, in a forward direction; this flexion is, however, not generally recognized by anatomists. Quain and Sharpey, Gray and others describe the virgin womb as being straight in its axis, and convex exteriorly in both the posterior and anterior walls of the body.

The concavity of the anterior of the virgin womb looks to the bladder in front, and the convexity looks to the rectum behind. The os uteri looks into the vagina at a right angle—indeed sometimes at an acute angle; the anterior lip being shorter and thicker, the posterior one longer and thinner.

The os uteri in women who have borne children is usually transverse and oval shaped, but in the virgin it is round and very small.

From the vulva to the os uteri the measurement, in the supine position, is about two inches, but it is even less than this in the erect posture.

To the posterior cul-de-sac or fornix the vagina is an inch and a half or two inches longer.

The axis of the vagina does not exactly correspond with the axis of the inferior strait. But a line drawn from the arch of the pubis to the lower end of the fourth sacral vertebra will nearly correspond with the axis of the normal vagina. It should be borne in mind that the vaginal canal is a little curved downward, the central portion being lower than at either extremity.

The womb is attached to the bladder in front, from its vaginal connection along its entire cervix up to the commencement of the body, corresponding to the coarctation or internal os; and it is just at this portion of the uterus—the junction of the cervix and body—that flexions are most likely to occur if force be applied either to the body or fundus, especially in the antero-posterior direction. The vagina is connected with the rectum behind, about three-fourths of its length, but its attachment to the bowel is not as firm and as strong as it is with the bladder. Over the remaining fourth of the vagina the pelvic peritoneal membrane is reflected; the peritoneum

is also reflected over the entire posterior supra-vaginal neck, the body, fundus, anterior portion of the body to its connection with the bladder and over the bladder to the abdominal walls in front. It will be seen that a hæmatocele, or an abscess situated either in the Douglas cul-de-sac or in the utero-vesical pouch or cul-de-sac, can be easily reached with a trocar through the upper portion of the vagina behind, or in front of the os through the septum between the uterus and bladder.

The front wall of the vagina is firmly attached to the bladder and urethra, which it supports. The anterior vaginal wall is much thicker than the posterior wall.

Exteriorly the womb is from two and a half to three inches long, it is about one and a half inches wide and one inch thick. The length of the cervical canal is from an inch and a quarter to an inch and a half; the cavity of the body is about one inch long.

The weight of the nongravid uterus is about an ounce and a half; the gravid womb weighs from thirty to forty ounces.

The womb may be said to be a floating organ in the pelvis, movable in every direction; it is compared by Dr. Elliot to a ship at her moorings, and it is called by Dr. Meigs a see-saw organ—but motion is made with the greatest facility in the antero-posterior direction.

Although the external genitalia are of great interest to the Gynæcologist and Obstetrician, I will pass them by with a brief notice, for to describe them minutely, both anatomically and physiologically, would consume unnecessarily the valuable time of the Society.

Just within the labia minora or *nymphæ*, and about midway their basal line, and outside of the *carunculæ myrtiformes*, on either side will be found the orifices of the vulvo-vaginal glands, or glands of Bartholine. These glands are thought to be the analogue of Cowper's glands in the male. These glands are about the size of a small almond, and they secrete a lubricating fluid, which, under erotic excitement, is greatly augmented. Sebaceous and mucous follicles are also distributed over the external genitalia in great abundance for lubricating purposes. These organs are very vascular, and are erectile, when in a state of physiological hyperæmia.

The vagina, as before stated, is a slightly curved tube, the concavity looking upwards, and it is larger in the middle portion than at either extremity, but very much the smallest at the outlet or vulva; it has been called, not inaptly, a funnel shaped organ. It is composed of a mucous membrane, a muscular band at its lower extremity and a dense fibro-cellular envelop. There is perhaps no organ in the body so elastic as the vaginal tube; it is easily dilated to a great extent, and under the action of astringents its contraction is sometimes so powerful that Gnyæcologists have thought there must be superior constrictor vaginal muscles.

Dr. Marion Sims is among the number who believe there are su-

perior constrictor muscles of the vagina. These muscles as yet have not been demonstrated, but there are muscular fibres running through every portion of the vaginal walls.

In both the anterior and posterior walls of the vagina, along their entire extent, there is a column of considerable thickness running in a longitudinal direction. The anterior column is larger, and it is the shorter by about two inches; it therefore puckers and folds the anterior wall upon itself laterally more than the posterior one. These transverse folds, which are much deeper in front, extend obliquely backwards, and are lost on the posterior column.

These columns and rugæ are larger and deeper in the vagina of the virgin than in the child-bearing woman. The mucous lining of the vagina is regarded as not being a true mucous membrane, as it partakes somewhat of the nature of the skin, in both its anatomical and physiological characters.

The epithelium covering the vaginal lining membrane is of the scaly variety. Kilian, who, by the way, was the first to describe minutely the papillæ which are thickly spread over the mucous membrane of the vagina, and covered with tessellated epithelium, regarded these delicate filiform bodies as possessing an exquisite sensibility. The mucous membrane is highly supplied with muciparous follicles which are continually pouring out a lubricating fluid —this fluid in its normal condition is of acid reaction.

The lining membrane of the cervix and cavity of the womb is a true mucous membrane; it is thinner in the canal of the cervix than it is in the cavity of the body. These membranes are not alike either in their anatomical or physiological characters. Dr. Tyler Smith was the first to describe the minute anatomy and physiology of the cervical mucous membrane.

This membrane affords a striking and beautiful example of the wise provisions of *Nature* in arranging columns and plicated furrows for the amplification and stretching, or folding out of the cervix in parturition. Without this provision for dilatation in child-birth, the os and cervix would invariably be contused and lacerated, for a body so large as a child at term, could not be forced through an opening so small and the tissues maintain their integrity. The arrangement of the folds and rugæ offers another advantage which should not be overlooked by the Obstetrician or Gynæcologist, which is this, that it gives an abundant surface for the development of the muciparous crypts—so-called glands of Naboth—which secrete a lubricating fluid in the nongravid uterus, and in the gravid womb, the mucous thickens—concretes as it were—and acts as a stopper or plug, effectually closing up the mouth and cervix uteri until near the termination of pregnancy. This fluid when normal is a clear, transparent, rather tenacious mucus of alkaline reaction.

The membrane lining the cavity of the body and fundus is thicker than that of the cervix uteri, it is also much smoother—has

no rugæ nor plicæ, and has a smaller number of muciparous glands developed in it. This membrane is about the eighth of an inch thick, in its normal state.

These uterine or utricular glands are, perhaps, in addition to sacreting mucus, the excreting or the exuding apparatus of menstruation: that is, they are the channels through which the blood escapes from the hyperæmic womb occasioned by the maturation of an ovule or ovules in the Graafian follicles in the ovaries.

In the physiological hyperæmia of the menstrual epoch the mucous membrane of the uterus is always thickened, not of necessity by actual proliferation of its tissues, but by simple congestion or fullness of the vascular structure and elongation of the utricular glands.

The mucous membrane is, however, sometimes proliferated and partially shed, or disintegrated at the menstrual period. I have never seen it cast off in an entire sac, but I have several times examined portions of the mucous membrane of the body and fundus of the uterus, that had been exfoliated by dysmenorrhœal patients during the menstrual epoch.

Last year I obtained a beautiful specimen of this exfoliated membrane from a patient who had long been laboring under chronic endo-metritis, or rather chronic fundal endo-metritis.

The orifice of one of the fallopian tubes was well displayed, and under the microscope the mouths or openings of the utricular glands could be seen in great numbers. It is probable when this "menstrual decidua," or so-called "dysmenorrhœal membrane," is thrown off in this thickened and entire or partially entire state, that it is a true decidual membrane resulting from a fecundated ovum, and the ovum failing to become attached perishes, and is cast off. This view of the matter is taken by Rokitansky, and admitted by Klob.

Dr. Grailey Hewitt thinks it probable that at every normal menstruation the mucous membrane of the uterus thickens, softens and is partially or wholly cast off, but it is so completely disintegrated that even shreds of it are not to be seen.

I trust the Society will pardon me for extending the discussion of this interesting subject to the pregnant and post-puerperal states. For nearly a century past until recently, very erroneous ideas have been held by a large portion of the profession concerning the formation of the decidual membranes; and also as to what is the condition of the interior surface of the womb after delivery either at the full term or at abortion.

The truly great William Hunter taught (1775) that the decidual membrane is an efflorescence of the mucous coat of the uterus, which is shed as often as a woman miscarries, or has a child at full term. He farther held that one stratum of this decidual membrane is never thrown off, but always remains adherent to the internal muscular surface of the uterus. This theory is held at the present time

by Dr. Mathuse Duncan of Edinburgh, Dr. Barnes of London, and Klob, Rokitansky and others, but it has not been taught except by very few, until the last fifteen years, either in this country or in Europe.

After the death of William Hunter, errors soon sprung up, which resulted in the false teaching that after the delivery the muscular internal surface of the uterus is left bare—denuded—and that the mucous membrane which is to line the womb after parturition, is formed *de novo*. But how this new formation is to take place, neither John Hunter, who seems to have originated this theory, nor any of his followers have ever undertaken to tell us. Nor can it be explained by any theory known to the profession at the present day, how a true mucous membrane with its glandular apparatus can be reformed from a denuded fibro-muscular tissue. The inner surface of the womb, after delivery, has been compared to the amputated stump of a limb. As just stated above it is only recently that the anatomy and physiology of the decidua vera and reflexa have been perfectly understood by Obstetricians and Pathologists.

Rokitansky, Klob, Duncan, and I may include Robin and Priestley, with many others, now teach that the fibro-muscular structure of the uterine cavity after delivery at term or abortion is never left bare, but that there is a layer of the decidua vera, which always remains attached to the fibro-muscular surface, and that this layer is composed of a soft, succulent, wide-meshed structure, or formed epithelial cells, fibro-cellular structure and fat granules which speedily return to the true mucous membrane that lines the unimpregnated womb. Dr. Duncan, M. Robin and others now teach that the site of the serotina or after-birth is not denuded, but it, too, is covered by a layer of soft pulpy epithelial membrane, even thicker than that which covers the rest of the surface of the cavity of the womb. Outside of the mucous membrane is the tissue proper or fibro muscular structure which constitutes the neck and body of the uterus. The walls are thinnest around the orifices of the fallopian tubes, and thickest in the fundus and middle portions of the body.

The muscular tissue of the body and fundus is arranged in bundles and layers which interlace and cross each other obliquely, transversely and longitudinally. There is a large amount of fibro-cellular tissue interwoven throughout the entire muscular structure of the womb. The tissue proper of the uterus is dense but somewhat friable in the unimpregnated state: it is covered exteriorly, as before mentioned, by the pelvic peritoneum; the muscular fibers of the uterus are of the plain or simple variety; the muscular fibers ramifying and strengthening the ligaments of the pelvis are also of the same character. These fibers are given off from the uterus, and add greatly to the elasticity and resistance of the ligaments.

As soon as impregnation takes place, the physiological hyperæmic condition of the womb is augmented and the organ increas-

ing in size, and being of greater weight, sinks lower into the cavity of the pelvis until about the fourth month when its increase in volume is so great, that it is forced out of the pelvic cavity into that of the abdomen. The augmentation of the muscular fibers of the uterus is very rapid until about the sixth month of gestation; its substance then becoming softer and more succulent.

The cervix uteri participates only to a slight degree in these anatomical and physiological changes until the last month of pregnancy, when the cervix rapidly enlarges at its superior portion, shortens and allows the fœtus to descend low down to the os, which now becomes thin and soft, but it remains closed until labor sets in.

The os does not participate in active contraction during labor, and this is fortunate for the well being of the child, and also for the os and cervix, for otherwise these tissues would almost of necessity be lacerated.

Laceration of the os and cervix uteri in parturition, especially in *primiparæ*, is not of unfrequent occurrence; and I will add in this connection that the perineum also frequently suffers in first labors by laceration. To assert that there is a greater or less laceration, either of the os uteri or perineum in one out of every three labors in primiparous women, would perhaps not be an extravagant estimation. In a gynæcological practice of many years, I remember to have seen very few perfect fourchettes in women who have borne children. I am aware that the general practitioner will dissent from this assertion, but this must be accounted for by the want of attention to this class of injuries at the time of labor. The Gynæcologist has a far better opportunity for detecting lacerations which have occurred in parturition, either by the cicatrices remaining, or by a failure of continuity.

Fatty degeneration of the muscular fibers of the uterus begins about the fourth day after labor, under favorable circumstances. Dr. Elliot says it may begin within twenty-four hours after labor. By fatty degeneration is meant the metamorphosis of the fiber cells into fatty granular cells. The cervix participates in this metamorphosis, but in a less degree. After complete metamorphosis and absorption of the proliferated tissues of the gravid uterus, the organ may be said to have regained its normal size. New formation of muscular fibers is said not to begin sooner than about the fourth week, and the complete involution of the uterus seldom takes place before the end of the second month.

On either side of the superior portion of the body of the uterus, just at the junction of the body with the fundus are given off the fallopian tubes. The word *tuba* signifies a trumpet, and the resemblance of a fallopian tube to that instrument is very striking. At the uterine extremity of the tube it is smallest, but it soon begins to enlarge, and increases in size until near the fimbriæ, when it is somewhat contracted, but again suddenly expands with a

fringe-like border, called *morsus diaboli*, from its supposed satanic-like grip. These tubes are from three to four inches long, a little tortuous in their course, which is outward and then backward on either side. The interior of the tubes exactly corresponds with their exterior form. The uterine orifice of the tubes is very small—just large enough to receive a bristle, such as is used by shoemakers.

The ovaries are attached to the outer extremities of the fallopian tubes by a single filament, which is longer than the rest of the fimbriæ.

Under the influence of excitement, and more especially when the ovaries and the bulbs are highly engorged with blood—physiological hyperæmia—the expanded and beautifully tufted extremities of these tubes grasp firmly the ovaries and maintain this position for a considerable time. In have seen in the dead room the free or fimbriated extremity of the fallopian tube grasp the ovary, from the irritation produced by being pinched with the forceps. It is probable that the fimbriæ remain in close contact with the ovary or ovaries during the entire menstrual epoch. M. Rouget and Dr. Savage both agree that in addition to the congestion of the ovaries and their bulbs, there is a beautiful arrangement of muscular fibres heretofore undiscovered, which assist in drawing and holding firmly the fimbriated extremities of the tubes in close contact with the ovaries.

This close contact seems to be a necessity; otherwise the ovule and the blood which issue from the ruptured Graafian follicle or follicles, might escape and be retained in the abdominal cavity, sometimes causing sterility or extra uterine fœtation with peri-uterine hæmatocele and pelvic peritonitis. The mucous membrane of the tubes is continuous with the uterine mucous membrane at their inner extremities, and at their outlet or fimbriated borders the peritoneum unites with the mucous membrane lining the inner surfaces of the fimbriæ. It is worthy of remark that this is an exceptional bond of union, a mucous with a serous membrane. The epithelial cells lining the mucous membrane of the tubes are of the columnar and ciliated varieties. As before stated, there is an ovary on each side corresponding with the fallopian tubes. An ovary weighs about a drachm and a half in the virgin, but it is usually not so heavy in women who have borne many children.

The ovary is about one and a half inches long and three-quarters of an inch wide, but a little less than this in thickness. These bodies are attached by their anterior borders to the broad ligaments, in whose folds they are completely enveloped, and it is at their inner borders, or facets of attachment, that vessels and nerves enter them. They are directly connected to the uterus by their inner borders, through the ovarian ligaments. The proper investment of the ovaries is a dense fibrous sheath. The stroma, which is a vascular structure of a pinkish color and firm to the touch, lies immediately beneath the fibrous envelop. It is in the

stroma that the Graafian vesicles are situated. These vesicles vary in size from a pin's head to that of a pea, according to their situation, and they number from ten to fifty in each ovary. These Graafian follicles or vesicles possess a double sac, and contain within their inner walls the ovules. At the menstrual epoch one or more of these vesicles become greatly distended with blood, causing an increase in size, and thus forcing the vesicle above the surface of the ovary, and when the distention can be no longer borne, the walls of the follicle burst and discharge the little ovule, which is either received into the orifice of one of the fallopian tubes and conveyed to the uterus, or it escapes into the abdominal cavity. Between the walls of the sac of the vesicle and also beneath them, blood is effused, which soon assumes a yellowish or reddish yellow color, and this is the *corpus luteum*. The presence of the *corpus luteum* in the ovary after menstruation was once regarded as an infallible evidence of impregnation; but I need hardly add it is not so regarded at the present day.

We now come to speak of the ligaments of the uterus, their connection with the adjacent viscera and the surrounding pelvic walls.

These ligaments are arranged in pairs, and are eight in number; the round ligaments—*ligamenta rotunda;* the broad ligaments—*ligamenta lateralia*, the vesico-uterine and the recto-uterine ligaments or plicæ semilunares, of Douglas.

The round ligaments are about five inches long, and are attached internally to the anterior cornua of the uterus, just in front of the insertion of the fallopian tubes, and externally they are inserted on either side of the pubic symphysis in the dense substance of the *mons veneris*. In the upward and forward course of these round cord-like bundles, they pass through a fold of the pelvic peritoneum, which constitutes the anterior borders of the broad ligaments.

The round ligaments extend in an anterior and forward direction from the uterus to the internal abdominal rings; and it must be seen that their force when contracting, will be in the same direction. These ligaments contain numerous muscular fibers which are given off from the womb. The round ligaments are very strong, and exert a powerful influence in holding the fundus and body of the uterus in a forward position. The direct auxiliary ligaments to the round ones, are the utero-rectal or sacral ligaments. The utero-sacral folds also possess a considerable muscular element which is derived directly from the uterus.

Besides the muscular fibers, the cellulo-elastic tissue, vessels and nerves; these ligaments are composed of the posterior duplications and expansions of the pelvic peritoneum. The inferior posterior portion of the cervix affords attachments for these ligaments; they then pass in a backward direction to be affixed to the rectum, and there dividing are inserted upon the inner facets of the sacrum on both sides. These ligaments are also very strong and hold the cervix firmly back towards the rectum, and thus assist the round

ligaments in keeping the womb in an oblique position, that is, in the axis of the superior strait.

The broad ligaments are firm, strong tissues, being composed of a double fold of the pelvic peritoneum, a large amount of fibro-cellular tissue, nerves, arteries, veins, absorbents and muscular fibers.

The broad ligaments and connective tissue occupy all the space laterally on each side between the lower segment of the uterus and the pelvic walls. Between the duplications of these ligaments, on either side, are situated the fallopian tubes and ovaries with their ligaments.

The uterus recives a strong support from the broad ligaments, and they also assist in sustaining it in its oblique position.

The utero-vesical ligaments connect the anterior-inferior portion of the cervix uteri with the bladder. These are the most delicate of all the pelvic ligaments; their office is to attach the uterus to the bladder. Between these organs there is a large amount of fibro-cellular tissue intervening.

Through all of the duplications and folds of the pelvic ligaments there is a large amount of connective tissue interposed. This fibro-connective tissue is also extensively distributed all around the pelvic walls, connecting and tying firmly every tissue together. The whole inferior portion of the pelvis is also lined with this same elastic cellular tissue, and all of the viscera there are connected together by it. The lateral walls of the vagina are attached to the pelvic walls by this tissue, which flattens them out on either side, and thus collapses their antero-posterior walls; and the lower portion of the rectum is connected with the vagina and the posterior pelvic walls by this extensive fibro-cellular element. The extent to which this fibro-cellular tissue is deposited, and also the extensive duplications of peritoneum in the pelvic cavity, should be remembered by the Gynæcologist and Obstetrician, in practice, in cases of pelvic cellulitis and peritonitis, and more especially should they terminate in suppuration. And here, I would remark, that pelvic peritonitis is generally regarded to be of rare occurrence except in the puerperal state, but it has happened to the writer to meet with pelvic peritonitis in practice very frequently complicating non-puerperal uterine diseases.

I have under my charge, at the present time, two cases of unusual interest. One a case of chronic endo-metritis complicated with pelvic peritonitis and peri-metritis or pelvic cellulitis. This patient is about thirty years old, she was married at twenty, and has never been pregnant. She is of small stature, neither a blonde nor a brunette, and her temperament is of the nervous variety.

The menstrual eruption occurred at the age of fourteen, and continued to return at regular intervals, and was normal in character, until several years after marriage. This case set in so insidiously that neither the exact time of its commencement can

be dated nor a cause of its origin satisfactorily assigned. For the last three or four years there has been distressing dysmenorrhœa with continued leucorrhœa of a more or less thick, (sometimes yellowish) tenacious, ropy (white of egg) discharge. Before and immediately after the periods this discharge has been very profuse. Dysuria has been almost a constant attending symptom in this case. The lumbar region, the sacro-iliac synchondrosis and the inguinal regions have suffered greatly with dull aching pains. There has generally been tenderness in the left iliac, inguinal and hypogastric regions, with more or less fullness in the latter region. The body and fundus of the womb have been very tender to the touch, and the introduction of the sound has always been attended with severe pain.

This case was treated by gentle aperients, warm hip-baths, hot salt-water douches, rest in the horizontal posture the most of the day, a mild nutritious diet, anodynes, small blisters frequently repeated in the groins, and cauterization with tincture of iodine and pure carbolic acid (Calvert's) applied with a fluid porte caustic to the cavities of the cervix and body of the uterus once or twice a week.

The dysuria was always increased by exercise, and hence the more urgent necessity for confinement to bed.

The progress of this case was favorable but slow until June, 1870, when two vascular tumours just within the meatus urinarious exturnus were excised with the scissors, and there were also, at the same time, removed by the scissors, two "tits," from near the posterior commissure. These little bodies were remnants of the hymen, and they were in a state of hyperæsthesia. Three days after the operation fever set up with furred tongue and chilly sensations, or rigors frequently recurring, total loss of appetite, urgent thirst, pulse ranging from one hundred and ten to one hundred and thirty-five, and tenderness and swelling with severe pain in the right iliac region just above Poupart's ligament. There was also to be felt on the right side of the vagina about an inch below the *os uteri* a hard unyielding body, very tender on pressure, which extended from this point up to the os and cervix uteri to be finally lost in the tumour of the right iliac region. The two tumours, that is, the tumour in the pelvis to the right of the vagina, and the tumour in the iliac region, seemed to be continuous, and I doubt not constituted one and the same tumour, which extended from the iliac region down through the right side of the pelvis to within less than an inch of the perineum, displacing the womb to the left side of the pelvic cavity. The uterus was immovable, being fixed in its new position by extensive effusion of lymph. Under the use of the iodide and bromide of potassium, aperients, close confinement to the horizontal position, blisters and a mild nutritious diet, the tumour was completely absorbed. If this tumour passed to the suppurative stage, I was not able to detect it either by fluctuation

or any particularly softened spot. West, McClintock, Hewitt and Thomas all concur in the opinion that pelvic abscesses may be absorbed even after fluctuation and other evidences of suppuration have been observed.

Had this patient remained quiet in her room, it is probable that complete recovery would have resulted in a short time; but soon after this she removed her quarters to the distance of several blocks, and in the preparation for moving she became greatly fatigued and excited mentally, which resulted in a chill followed by fever, and acute pains in the right side of the pelvis with swelling in the right iliac region extending into the pelvis on the right side of the womb and vagina, and pushing the womb over to the left side of the pelvis, as was the case when the first tumour existed.

The tumour continued to enlarge, displacing the womb against the pelvic walls on the left side, and completely fixing it by effusion in this new situation. The treatment adopted was with a little alteration the same as that given above; but the tumour after several weeks softened and pointed on the right side of the perineum. I opened the abscess with a bistoury, and an enormous amount of matter was discharged. More than half a pint of pus was collected, and a good deal was lost on the cloths. The pus was normal in character, but very offensive. The abscess discharged profusely for two weeks, and it has not completely healed, but the discharge is now periodical. When the orifice closes for a few days, the iliac region becomes full and painful, and there is more or less fever every afternoon; but just as soon as the matter begins to discharge again the pain, fulness and fever all subside, and the patient brightens up and is cheerful and hopeful of recovery. I have seen this patient to-day; she is improving in flesh and gaining strength, and the discharge is very small in quantity, and the iliac and hypogastric regions are soft, natural and free from tenderness. Her appetite is almost voracious, and her digestion is good.

Query. Could all of this inflammation, effusion or infiltration of lymph with suppuration exist in the pelvic cellular connective tissue, and yet not involve the peritoneal duplications composing the pelvic ligaments?

The other case is a woman, about forty-two years of age. She is of medium size and fair complexion; the menstrual eruption occurred at the age of fourteen, and her periods have continued normal and regular, with only an interruption of several months, during the year of 1857, until about eighteen months past. This woman married at the age of eighteen, is childless, says she has never been pregnant, and has enjoyed pretty good general health up to about five years ago. Being unusually exposed in the winter of 1865 she took a violent cold, which terminated in a chronic bronchitis.

The bronchial affection was not relieved for about three years;

her cough during most of the time was very troublesome, and she became very much emaciated; at the present time her general health is greatly improved. Her menstrual epochs, for ten or twelve months past, have been accompanied with distressing fullness and tenderness, amounting to soreness, and sometimes they are attended with the most acute suffering, in the hypogastric and iliac regions. Occasionally during her periods, but usually immediately after menstruation, acute, or rather sub-acute inflammation of the pelvic peritoneum sets up. These inflammatory attacks are sudden, without any warning, save the symptoms given above, and they always set in with violent pain in the iliac and hypogastric regions. The pain is sometimes paroxysmal, but there is always a degree of pain present, which is scarcely bearable without giving utterance to expressions indicating the most intense suffering. The tenderness in the pelvic region is so great that the slightest pressure cannot be borne without intense suffering—the lower limbs are constantly drawn up to relieve the pressure by the abdominal muscles on the pelvic viscera. During the acute stage, which usually lasts from three to four days, there is constant nausea, and the temperature of the body is raised to from 102 deg. to 104 deg., the skin is dry, and the pulse rises to 120 or 125, and is small and quick, and the bowels are obstinately constipated. Although there is great fullness in the hypogastric and iliac regions and the temperature of the vagina is greatly augmented, no effusion of lymph in the pelvic connective tissue has been detected at any of the attacks, although strict attention has been directed to such a pathological result. There is always present at these attacks a tympanitic condition of the small intestines, which adds greatly to the general distress.

There is in this case one constant attending symptom which is worthy of notice. About the subsidence of the menstrual period fits of the most deadly nausea are induced by assuming the erect posture, and sometimes even by turning in bed, and what is more remarkable the nausea is frequently attended while in the horizontal posture with syncope, which lasts frequently for several minutes, even under the most active measures to relieve the fainting. These attacks always leave the patient very much exhausted, and the swelling and soreness, which are so distressing in the pelvic region, do not pass away for six or eight days after the acute symptoms have subsided.

During the acute stage of these attacks there is frequently the most distressing dysuria. This patient is approaching the *menopausis*, and it is possible that after ovulation ceases, her uterine troubles may be entirely removed by appropriate treatment, and her general health become good.

When it is borne in mind how frequently inflammation of the pelvic tissues complicates uterine diseases in the non-puerperal state, an apology sufficient, I trust, will be offered for the intro-

duction and partial detail of the prominent symptoms in the cases given above. I could give at length other type cases equally interesting; but it is hoped that these examples will impress upon the practitioner the importance of early attention to the possibility of pelvic peritonitis and pelvic cellulitis setting suddenly up and complicating chronic uterine disorders.

When it is remembered that all of the dense, elastic and strong ligaments with their arteries, veins, lymphatics, nerves, fibro-connective tissue and muscular fibers, and also the iliac fascia, the pelvic fascia and the *levatores ani* muscles constitute the pelvic floor, which has great firmness and elasticity, it will be seen, that the pelvic organs, especially in women who have not borne children, or even women who have borne only few children, are well sustained. The perineum also assists in supporting the pelvic organs. And furthermore, the pelvic floor is covered over on its internal surface by another layer of peritoneum, which adds to its strength, thus enabling it to support the superincumbent abdominal viscera, and also to resist under exertion, the most active contraction of the abdominal muscles, if the pelvic organs are in a normal state.

It is observed in civilized life that laboring women, who remain much in the open air, are comparatively exempt from uterine displacements, except in connection with neoplasms, subinvolution and chronic inflammation with hypertrophy.

The Gynæcologist should not lose sight of the ample supports which nature has given to the pelvic organs in the treatment of chronic inflammation and hypertrophy complicated with displacement.

There are now, as there have been, both in Europe and in this country, for some years past, two schools, the one attributing most of the uterine diseases to displacements, and the other regarding the displacements as a secondary matter, and dependent on chronic inflammation and enlargement. Both these opposites —"camps"—cannot be in the right: it is probable that the truth lies intermediately between these extreme views, and that, in the treatment of uterine disorders the medical philosopher will neglect neither the inflammatory condition and hypertrophy nor the displacement. And here I would remark that if mechanical support to the displaced uterus be resorted to, that form of instrument should be selected, which will keep both the vagina and the womb in their normal axes, without undue pressure either upon any portion of the uterus or the vagina. It is now admitted, almost universally, by Gynæcologists that Hodge's lever pessary, or some modification of it, more completely fulfills the above indications, and is therefore preferred to all other supports. Dr. Graily Hewitt's lever pessaries are only modifications of Hodge's pessary, and Hodge's pessary is a modification of Meigs' ring pessary. The colpeurynter or gum bag, and the cotton glycerole wad of Sims

may, under some circumstances, be used with advantage in displacements.

When the natural supports of the uterus are considered and the normal relation of the vagina to the womb is not forgotten, it will be seen that Hodge's, or some of Hodge's modified pessaries can be better adapted to the vagina, and will therefore give a safer and easier support to the prolapsed or retroverted womb than any other passary now in use. Of the numerous passaries used and recommended by Gynæcologists all are preferable to that variety which includes the intra-uterine stem, and the stem and cup pessaries.

I must agree with Dr. Savage in his comment upon Sir James Simpson's stem pessary before the Obstetrical Society of London, that no form of stem or stem with cup pessary can be made a safe support to the uterus; he says, "is not the record of stem pessaries one of grievous disaster?"

In rejecting the stem pessary (and every modification of it) I deeply regret that I am compelled to dissent from any opinion held by that great and good man, whose wisdom the gynæcological world has so recently been deprived of by his much lamented and untimely death.

An organ like the uterus, so delicate and so changeable, situated by the Creator, in His infinite wisdom, in the center of the pelvis, and there so perfectly balanced that it is movable in all directions with the greatest facility, cannot be confined or fixed in any position by instrumental means without the greatest hazard of doing violence to the tissues, and thereby exciting dangerous inflammation.

It will be seen, if the plane and axis of the superior strait and also the axis of the body when *erect* are borne in mind, that the force of gravity acting upon the abdominal viscera must incline them in the direction of the axis of the body. Now, if this be so, and it cannot be doubted, the force of the viscera must be spent mainly upon the body of the pubis, for a vertical line drawn centrally through the body when erect, will fall directly upon the symphysis pubis. So it is clear that the pelvic floor does not receive all the weight of the abdominal viscera. This arrangement of the axis of the body and the axis of the superior strait not corresponding is another example of nature's wise and beautiful provisions.

The small intestines which occupy the Douglas cul-de-sac together with those in the utero-vesical pouch, instead of really bearing down the womb as has been generally supposed, do unquestionably assist the pelvic ligaments in their office of keeping the fundus and body of the uterus in an oblique and normal position.

I am indebted to Prof. Hodge, of Philadelphia, for directing my attention specially to the wise and admirable arrangements of

nature for preserving the delicate and changeable pelvic organs in their proper relations.

The nerves of the ovaries and fallopian tubes are derived from the spermatic or ovarian plexus. The fallopian tubes have in addition a branch from the uterine nerves. The uterus is supplied with nerves from the hypogastric and spermatic or ovarian plexuses; the third and fourth sacral nerves also give off branches to the uterus. It is not an easy task to dissect out minutely the nerves of this organ, for they are so densely matted together by connective tissue, muscular fibres, blood-vessels and lymphatics that it is almost impossible to trace them out with perfect accuracy; and a want of accurate knowledge of these nerves has led to conflicting statements by investigators concerning their development, and more especially their augmentation in the gravid uterus. But the proliferation of the nerves of the pregnant uterus, as believed by Hunter, and boldly asserted by Dr. Robert Lee, of London, is denied by Dr. Snow Beck and others—indeed, this theory of Dr. Lee's is now universally admitted to be erroneous. The honors which were conferred upon Dr. Lee by the "Royal Society of London" for his contributions to the anatomy and physiology of the gravid uterus, have been formally withdrawn from him by that "body."

The nerves distributed to the vagina are from the hypogastric plexus of the sympathetic, and also from the pudic nerve of the fourth sacral nerve. The external genitalia are supplied from the genito-crural, the inferior pudendal and the internal pudic nerves. The *glans clitoridis* receives large branches from the pudic nerve.

The entire erectile tissue of the genital organs is supplied with nerves from the pudic and hypogastric plexuses. There is an abundant distribution of lymphatics to the organs of generation.

The arrangement for supplying with blood the ovaries, uterus and vagina with their bulbs or erectile apparatus, and the external organs of generation is so ample and complete, that they are not only well nourished, but they can sustain when under erotic excitement a physiological hyperæmia of a high degree, for a considerable time. This turgescence is maintained by the erectile structure provided for this purpose, at the outlet of the vagina on either side, and along its whole extent laterally, and also up the sides of the womb and beneath the ovaries. The erectile apparatus on the sides of the vulva compose the vaginal bulbs, which are oblong bodies of more than an inch in length, and half an inch thick, and are made up of tortuous veins, and are enveloped in a fibrous sheath. These veins communicate freely with the vaginal plexus, and empty themselves finally into the obturator veins, after receiving large branches from the internal pudic arteries. The os, cervix and body of the uterus are furnished with blood from the utero-ovarian arteries. These vessels are four in number, and give off numerous branches to the sides of the uterus, forming

a complete net-work over the lateral walls of the uterus and terminating in the pudendal, uterine and spermatic, or ovarian veins. The spermatic or ovarian vein of the right side empties directly into the great *vena cava*, but the ovarian vein of the left side takes a longer and indirect course, by first emptying itself into the left renal vein, and thence into the *vena cava*. This indirect route, besides frequently meeting with a sluggish circulation in the renal vein may in some degree explain the comparative frequency and enlargement on the left side of the uterus, and also the pain in the left inguinal region. Whatever may be the cause of the greater susceptibility of the left iliac and inguinal regions to pain and tenderness, and also of the more frequent occurrence of congestion and enlargement of the left side of the cervix and body of the uterus, a tardy circulation of the venous apparatus of the left side frequently recurring, may with some degree of propriety be regarded as an aggravating influence after diseased action has been set up, if it really be not causative of it. The spermatic arteries together with the utero-ovarian arteries supply the ovaries with blood; these trunks pass on to the base of the ovaries and there branching in great numbers finally penetrate the ovaries. The bulbs of the ovaries—vascular bodies—only recently known through the labors of Mr. Traer, M. Rouget and Dr. Savage, are composed of a very great number of tortuous veins, which come directly from the ovaries; they are bound together by a fibro-elastic investment and are about the size of the vaginal bulbs.

The vascular apparatus of the entire genital system is so constructed that a large amount of venous blood may be temporarily—physiologically—retained in the venous plexuses under erotic excitement of these organs, and through this means both the external and internal genitals are erectile—not only the clitoris and labia, but the vagina, uterus, fallopian tubes and ovaries partake of this erectile nature in a larger degree.

With a thorough knowledge of the relations that the urinary bladder and the urethra sustain to the rest of the pelvic organs, and more especially to the uterus, it is plain to perceive that no uterine displacement can take place without changing the position or relations of the urinary bladder in a greater or less degree. The anatomical relations of these viscera should always be borne in mind in the treatment of uterine diseases and displacements, and more especially in those disorders of the womb in which the bladder is also a source of trouble.

I have seen bladders severely dealt with, and medicines freely administered for supposed chronic cystitis, when the urinary trouble was wholly sympathetic or mechanical, and dependent upon either chronic inflammation of the uterus, enlargement, or uterine displacement.