practice has been carried out, have been anything but encouraging. Of the three laparotomies done at one of the advanced hospitals before Santiago, the mortality was one hundred per cent. In order to accomplish successful abdominal work in war it will be necessary to use a great deal of forethought, so that the operators may not be hampered by the endless difficulties that are apt to occur in active campaign. It is possible to conceive of a field hospital so thoroughly equipped with material and personnel, and so favored by the condition of the weather, that in it a laparotomy may be performed with about the same safety as is experienced in a civil or fixed hospital. So far, the idea of establishing such a hospital has not been acted upon seriously. The subject is one replete with possibilities. *Louis A. La Garde.*

GURJUN BALSAM.—Wood Oil. A viscid, copaiba-like turpentine, obtained from half a dozen or more majestic Asiatic trees of the genus *Dipterocarpus.** The "balsam" is collected by making deep "boxes" or gashes in the trunk of the tree, scorching them, and fitting a bamboo spout to their lowest parts. The yield is very great, and the drug forms quite an important article of commerce in the East. It is officially recognized by the Indian Pharmacopœia, and extensively used there as a substitute for copaiba. In other countries it is considerably used to adulterate the latter drug.

It is an intensely fluorescent, thick liquid, of a mild, terebinthinous odor, and a bitterish, aromatic taste. By transmitted light it is of a deep sherry color, and perfectly transparent; by reflected light it appears opalescent and greenish-gray. It is soluble in chloroform and the essential oils, but not completely so in alcohol. It consists of thirty or forty per cent. of a mild-smelling essential oil associated with a composite resin, composed of a crystalline *gurjunic acid*, and an amorphous portion. As it is collected from several different trees, its appearance, and also probably its composition, are subject to considerable variation.

Uses.—In India and Asia generally as a substitute for copaiba in the treatment of gonorrhœa, etc., and as a varnish. It is occasionally to be got in this country, but is prescribed only as a novelty. *W. P. Bolles.*

GUTTA PERCHA.—The inspissated milk-juice of *Palaquium Gutta* (Hook. f.) Burck (fam. *Sapotaceæ*). (No longer official in the United States.) This remarkable substance is admitted into the pharmacopœias of most countries on account of the elastic varnish which can be made from it, and of its value in the making of plastic splints in surgery. The plant is a large tree growing, now or formerly, in many parts of Southern Asia, and in the great islands of the Pacific. Gutta percha was first brought into European use in 1842, having been previously employed by the aborigines in the manufacture of knife and weapon handles. From the vicinity of Singapore, where it was previously abundant, from Penang and other accessible places, the tree has been practically exterminated by the wasteful method of collecting its valued product. It still exists, however, in abundance in the Malay peninsula, whence most of the gutta percha now comes, in Borneo, Sumatra, and other places. The method of collection is as follows: The trees are felled and the bark is stripped off, when the milky product beneath it collects upon the surface of the wood, and is scraped off and put into a hollow leaf or other convenient receptacle. This juice quickly coagulates upon exposure to the air, and the putty-like curd is moulded while yet soft into blocks or cakes of various sizes and shapes. It is of a light or medium brown color, often gray upon the surface, sometimes, when nearly pure, white or ash-colored, of a peculiar rubber-like odor, and a rather flexible consistence at common temperatures. At something above 120° F. it becomes very plastic, and may be moulded into any shape and welded, resuming its hardness upon cooling. Ordinary gutta percha is an impure substance, containing inevitably, by the method of its collection, a considerable amount of coarse admixture of vegetable tissue, chips, etc., besides the residues of the evaporation of portions of the liquid juice, imperfectly separated from it in coagulating. It is soluble in chloroform, turpentine, carbon disulphide, etc., but not in water, alcohol, acids, or alkalies. Its purification may be effected by solution in one of the above, or by mixing with hot water and straining. The sheets, in which form it is generally sold for surgical use, are made by rolling it while hot between cylinders.

The principal portion, seventy-five per cent. or so, of good gutta percha, consists of an amorphous white mass or powder having the general properties given above, named *gutta*. It contains, further, from fourteen to sixteen per cent. of *alban*, a light flaky powder soluble in boiling alcohol, and from four to six and a half of *fluavil*, which is rather more soluble than either of the above (Payen).

Gutta percha is employed in medicine only on account of its physical properties. A nine-per-cent. solution of it in chloroform, with ten parts of carbonate of lead added mechanically to carry down coloring matters and impurities, is an excellent protective varnish for abrasions, excoriations, and small wounds, to be used in the same way as collodion. In sheets, from one-eighth to one-fourth of an inch thick, it is to be had of the instrument makers as a splint material. For cases in which there is a good deal of irregularity of surface to be fitted, as in fractures of the jaw, the bones of the thumb or great toe, or the metacarpal or tarsal bones, it is very useful; also in making splints that must be often taken off and reapplied. The form of the splint should be cut about one-fourth larger each way than the desired splint, as it shrivels when softened and when thrown into water at a temperature of about 130° or 140° F. or more. The limb having been prepared by adjusting the parts, shaving, bandaging, etc., as required, the softened splint is laid on the part and quickly moulded by the fingers to the desired form. A bandage where necessary is then applied, and cold water poured over all. When hardened the gutta-percha splint may be taken off, trimmed, and permanently reapplied. If it is desired to piece or weld the gutta-percha, it should be softened by dry heat, as over a lamp or gas. The fingers may be wet while handling it. Its use in submarine cables and other electrical apparatus is very extensive. *W. P. Bolles.*

GYNÆCOLOGICAL EXAMINATIONS.—History.—A proper history is a necessary preface to the diagnosis of every gynæcological case. It should not of necessity be lengthy, but certain facts in the life history of the patient, peculiar to her sex, which may have an especial bearing upon the condition of the female organs, should be carefully inquired into.

We will pass over the points common to all histories and simply emphasize those having a gynæcological bearing. The menstrual history should be thoroughly ascertained. The age at which the menses first appeared; the duration of the flow; the quantity and character; if accompanied by pain, whether it develops before, during, or after the flow; the regularity of the periods; and, finally, the history of the menopause—these are all subjects for inquiry.

In judging the condition of the menstruation as to duration, quantity, and regularity, it is well to remember that in this respect every woman is a law unto herself, and she must therefore be judged according to her own standard. But, her habit in this respect having once been established, she should not deviate from it.

The history of her pregnancies should be thoroughly investigated, as about two-thirds of all patients coming to the gynæcologist can trace their sufferings from a miscarriage, a difficult labor, or an abnormal puerperium.

Pain in some form or other is the most prominent gynæcological symptom, and is usually responsible for the patient's seeking the aid of her physician. The pain

* The following are mentioned in the Pharmacographia: *D. turbinatus* Gaertn., *D. incanus* Roxburgh, *D. alatus* Rox., *D. zeylanicus* Thw., *D. hispidus* Thw., *D. crispalatus*, and several others.

may be in the form of headache, backache, pelvic tenesmus, or a sensation of bearing down; or it may be referred to some particular part of the pelvis. Its character and location should be carefully ascertained. The condition of the bowels is a very important point for inquiry, as so many of the troubles in this class of patients are due to pelvic congestion induced by chronic constipation and irregular habits of going to stool.

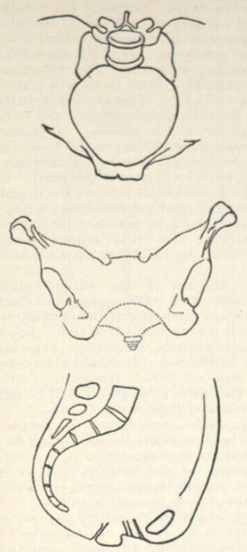

Fig. 2417.—Outline Diagrams for Recording Displacements, Growths, etc., in History-Taking.

Any bladder symptoms should be noted, especially burning or pain on micturition and frequency of the act, as they may be an indication of gonorrhœa, a disease which is now recognized as one of the most potent factors in the etiology of gynæcological cases.

The character, quantity, etc., of any discharge should be determined.

Finally, the presence of those symptoms known as neuroses, of a reflex character, should be recognized.

For the details of more extended history-taking the reader is referred to such works as those of Kelly, Reed, and Montgomery, the "American Text-Book of Gynæcology," etc. For ready reference, speed, and accuracy, we believe that the card-catalogue system, used in conjunction with outline diagrams of the various pelvic planes, in which it is possible graphically to note the size, situation, and shape of growths, displacements, etc., is of especial value in recording gynæcological cases. Rubber stamps of diagrams of the pelvis and abdomen have been devised by Dr. R. L. Dickinson, of Brooklyn, and their utility is testified to by many eminent gynæcologists (see Fig. 2417). Whatever system of history-taking is adopted it should be strictly adhered to, as routine habits will undoubtedly guard against error.

The novice will do well to remember, if he wishes to avoid embarrassment both to himself and to his patient, that all subjects of a delicate nature should be approached in an open, frank manner, devoid of subterfuge or insinuations of any kind, and coupled with the kindness and dignity of manner befitting a gentleman.

That the patient will submit to an examination should be taken as a matter of course, as at the present day most women know that such a procedure is a necessity and are prepared accordingly.

Anæsthesia.—In virgins it is desirable when possible to examine under anæsthesia, for as a rule, a first examination of such patients is very unsatisfactory, and therefore productive of no positive diagnosis. Nitrous oxide is an ideal anæsthetic for such a case.

If it is possible to avoid it, a vaginal examination should not be made in *virgines intactæ*. In the majority of cases a rectal examination will answer all purposes. The method of recto-abdominal palpation to be used will be described later.

Not infrequently in married women, if there happens to be an unusual rigidity of the abdominal muscles or a superabundance of fat, it is desirable to employ an anæsthetic, especially when the advisability of an operation is dependent upon an accurate diagnosis. When an examination is decided upon it should always be carried out in a thorough manner, and this necessitates that a systematic plan of procedure should be followed.

Nurse.—Whenever possible, a third party should be present, not only for the comfort of the patient, but as a protection to the physician from the malicious charges which the records show are by no means uncommon. If the physician can have a nurse at his disposal, this plan is by far the best, as the ready assistance and soothing influence of a trained female assistant go far toward rendering the ordeal less trying to the patient, and enable the physician to conduct his examination with much greater facility. When a nurse is not available, a female friend brought with the patient may often be of great assistance in holding a speculum, etc., but there will be many occasions when the general practitioner will have to conduct his examination unaided. While an assistant is certainly desirable, she is by no means indispensable.

Table.—The question as to what is the best table for gynæcological examinations is one that is often asked by the novice. The simpler the table the better. A costly complicated table or chair is not at all necessary, and a great many gynæcologists work with one of the simplest construction. An ordinary solid table, four feet long, two feet wide, and two and one-half to three feet high, will answer for all ordinary purposes. The foot of the table should be raised about two inches, and should be fitted with foot-rests. An extension arm or leaf attached to the right-hand corner is of great utility when employing Sims' position, as it allows the legs and feet of the patient to have a proper support, when the buttocks are drawn to the edge of the table.

A valuable adjunct, in the writer's opinion, is a pair of Edebohls' leg-holders.* They consist of two perpendicular rods that are attached to the corners of the table and have slings at their upper ends. The feet being fastened in the slings, are elevated to such an extent that the thighs are flexed upon the abdomen and rotated outward. This insures the greatest amount of relaxation of the abdominal muscles, and successfully prevents the approximation of the patient's knees. It is therefore of especial value in nervous patients.

Placing the Patient upon the Table.—If a nurse is not available, the physician should understand how properly to place the patient upon the table, so that he may not appear awkward or render the ordeal unnecessarily embarrassing. A screen should always be at hand, behind which the patient is instructed to retire in order to loosen all tight clothing about her waist, and especially to unfasten her corsets.

In all cases the patient should empty her bladder before going on the table. This is a detail that is frequently neglected, and it is the cause of an unsatisfactory examination in many instances. It is likewise of advantage that the lower bowel should be emptied, and when possible the patient should be instructed to take an enema before coming to the physician's office. The patient should be first placed in the dorsal position to permit of the bimanual examination. A stool or chair is placed at the foot of the table and the patient is directed to stand upon it, while the physician holds up a sheet between the patient and himself. She is then instructed to lift up all her skirts behind and sit down upon the edge of the table. She next lies down and the sheet is thrown over her, while her feet are adjusted in the foot-rests. The folds of the sheet are then wrapped about each leg so that there is no part exposed but the vulva.

The Examination.—The examination for purposes of diagnosis should consist of two parts—the first without instruments, and the second with instruments. It may be possible to arrive at a diagnosis by the bimanual touch

* New York Jour. of Gyn. and Obstet., January, 1893.

alone, but an examination confined to this procedure alone cannot be considered thorough or complete; an actual inspection of the cervix, and an exploration of the uterine cavity are in many cases indispensable if an accurate opinion is to be given as to the conditions present.

The Examination without Instruments.—This should be conducted systematically. A good plan is to investigate the parts from without inward, commencing with

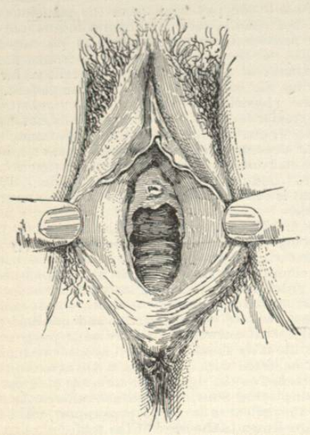

FIG. 2418.—Method of Separating the Labia for Inspection of External Genitals.

the external genitals; then the vagina, cervix, uterus, ligaments, and the appendages are examined in order.

The Inspection.—This is an extremely important part of the examination, and it is too frequently omitted.

The labia majora are separated with the fingers of both hands, and the hood of the clitoris is retracted, so as to reveal any adhesions or retained concretions which may be the cause of irritation sufficient to produce neurotic disturbances. The meatus urinarius is examined for caruncle, prolapse of urethral mucous membrane, or urethritis. Skene's glands are to be observed for evidences of inflammation and discharge. These glands are very often the site of a latent gonorrhœa which would be overlooked unless they were carefully examined. The presence of a discharge in the urethra or from Skene's glands can best be determined by "milking" the anterior vaginal wall with the palmar surface of the index finger. A suspicious discharge should be stained for gonoccocci.

Prolapsus of the anterior and posterior vaginal walls (cystocele and rectocele) and procidentia uteri should be looked for, and so also should varicose veins of the vulva which are the result of some obstruction to the circulation and may be indicative of a tumor or growth blocking the pelvis.

The amount of prolapsus can be best judged by getting the patient to strain or bear down as if at stool, while the examiner's fingers separate the labia. This method shows the degree of relaxation of the vulvar outlet and the amount of supporting power of the pelvic-floor muscles. Injuries to the levator fibres and the pelvic fascia are thus accentuated. The degree of laceration of the perineum should never be estimated by a superficial inspection, as there may be an ample cutaneous covering, but with no body back of it. If the body of the perineum be grasped between the thumb and forefinger, after the latter has first been introduced into the rectum, the amount of muscular structure can be readily determined.

Bartholin's glands should always be examined for evidences of inflammation, which is almost invariably gonorrhœal in character. Latent gonorrhœa will be discovered by the careful examiner in the vicinity of these glands in a surprising number of cases. Normally the mouths of the ducts, which are situated on each side of the labia majora just below the centre, and usually behind a tag or ear of the remains of the hymen, are of the same color as the surrounding mucous membrane. The normal secretion which can be expressed from them is a glairy, colorless fluid like white of egg. Whenever the mouths of the glands seem to be much darker in color and to be eroded, suspicion should at once be aroused. If gonorrhœa is still present, the secretion expressed from the glands will be found to be turbid or purulent, and, if careful search is made, gonoccocci will usually be found. In such a case the gland itself can be felt between the thumb and finger to be decidedly enlarged and sometimes tender.

The anus and rectum should be searched for hemorrhoids, fissure, fistula, etc. The rectal mucous membrane can be readily everted by the finger placed within the vagina.

Any inflammatory condition of the vulvo-vaginal mucous membrane, if associated with copious purulent discharge, can hardly escape the notice of the careful observer, who will recognize it as a specific infection. Likewise the presence of condylomata, chancroids, venereal warts, etc., will readily be detected. It should always be borne in mind that an innocent wife is frequently a sufferer from diseases of this class through no fault of her own, and in utter ignorance of their nature.

The Bimanual Touch.—After completing the inspection, the physician will next lubricate the examining fingers with some lubricant, as vaseline, glycerin, or lubrichondrin. (The advantage of the latter is, that it is readily soluble in water, so that the hands can be speedily cleansed after they have been smeared with it.)

The examiner should accustom himself to the use of the fingers of either hand in the vagina, as it is easier to reach the left appendage with the left hand, and the right appendage with the right hand.

At first it is best to use the index finger alone in the vagina, but later, if the vagina will permit, the middle finger should be used in conjunction with the index finger. In introducing the fingers, they should be first flexed and the vulvar opening approached by sweeping the knuckles of the flexed fingers over the perineum from below, until the *knuckles* slip into the vaginal orifice, then the fingers are straightened until they find their way over the perineum into the vagina. By the employment of this

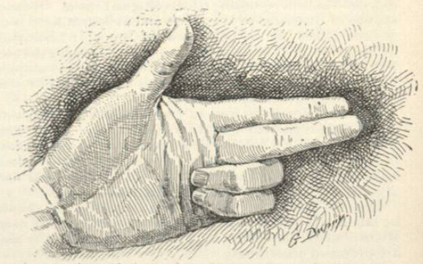

FIG. 2419.—Position of Fingers for Vaginal Examination

method it will be possible to avoid touching the clitoris, urethra, and vestibule with the tips of the fingers, and should the circumstances of the case not permit of an inspection (as in an emergency examination, with the patient in bed), the entrance to the vagina can always be found with the greatest ease and without causing any pain or distress whatever to the patient.

After the fingers have gained entrance into the vagina, the size, thickness, and sensitiveness of the organ are to be noted. The mucous membrane may present a smooth, velvety feel as when the rugæ are obliterated, or it may

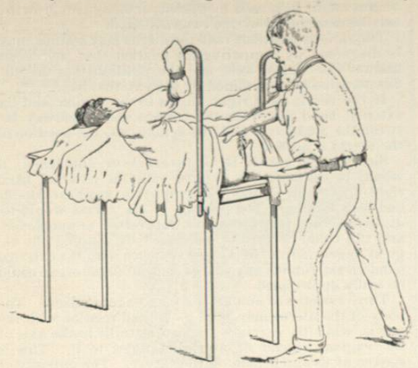

FIG. 2420.—Bimanual Examination, with the Patient on the Table.

feel harsh and granular as in certain forms of vaginitis. Spasm of the vagina (vaginismus) may be observed as the fingers pass the introitus.

It is important that the fingers should be held in a manner that will insure deep penetration into the pelvic cavity. The hand must be rendered as narrow as possible to permit its passage between the ischial tuberosities. When this is accomplished the whole pelvic floor can be pushed up or invaginated so as greatly to increase the penetration of the examining fingers, and thus render accessible to the touch parts which cannot otherwise be reached.

The hand should be held in a perpendicular position with the thumb extended so as to avoid the symphysis. The index and middle fingers rest in the vagina with the palmar surface of their tips inclining upward. The ring and little fingers are flexed upon the palm at the *middle* joint. It will be seen that this will give the minimum of breadth to the hand, allowing its passage between the tuberosities, while the perineum is pushed up on the knuckles of the ring and little finger (see Fig. 2419). The mistake is frequently made of flexing the fingers at their junction with the metacarpal bones. This will bring the whole length of the third phalanx of the fingers across the pelvic outlet which will render it impossible for the hand, which is then at its greatest width, to enter the pelvis. If necessary, the thumb may be closed upon the index finger so that it will pass under the pubic arch.

The elbow of the examining hand should rest against the examiner's hip, and all pressure should be made by throwing the weight of the body upon the elbow, thus allowing the muscles of the forearm and arm to be at rest, which greatly facilitates the vaginal touch (see Fig. 2420). As the fingers pass on toward the upper portion of the vagina, they should convey to the examiner a knowledge of the direction of the canal, of any abnormal relaxation of its walls, and of the presence of cysts or other abnormal growths. The presence or absence of fæcal matter in the rectum can be readily made out with the finger in the vagina. Sometimes hard scybalous masses may be mistaken for an abnormal growth by a careless observer, but they can usually be indented on pressure. However, if there is any doubt, an enema will promptly clear up the diagnosis. As soon as the cervix has been reached, the fingers should be rotated until their palmar surfaces are directed upward, and their tips should be slipped under the cervix until that organ rests upon them. The relation that the cervix bears to the axis of the vagina should be accurately noted. When the uterus is in its normal position, its axis is approximately at right angles to the axis of the vagina. Therefore the tip of the examining finger should touch the anterior wall of the cervix as it reaches the upper portion of the vagina. Should the examining finger directly enter the mouth of the cervix, it would be an indication that the uterus was displaced backward (retroverted), and that, therefore, the axis of that organ was parallel, or continuous, with the vaginal axis—unless further examination showed that the body of the uterus was flexed upon the cervix. In cases of extreme retrodisplacement, the cervix would be found to be pointing upward toward the symphysis, and the entering finger would encounter the posterior cervical wall (see Fig. 2421).

In anteversion the cervix will be found to point backward, its axis forming an acute angle with the axis of the vagina.

It must be borne in mind that the position of the uterus can be greatly influenced by the amount of urine in the bladder. A full bladder will throw the uterus into a position of retroversion. Errors will be avoided if the precaution is taken to have the bladder emptied before the examination.

The condition of the cervix itself can readily be determined by the sense of touch. The number, extent, and location of lacerations (if any are present) should be noted. It is important also to determine the degree of patulency of the os, and whether any granular erosion or carcinomatous induration exists. The presence of dense scar tissue in the angles of lacerations should be felt for, and the effort should be made to ascertain whether there is any hyperplasia of the cervix or any cystic degeneration of the Nabothian glands. Cysts of the glands of the cervix give to the touch the impression of the presence of buckshot under the mucous membrane.

The normal position of the cervix in the vagina is usually at a point corresponding to about the junction of the upper and middle thirds, and ordinarily it is not difficult to reach. In some cases, when there is a very deep vagina, or when the pelvic muscles are rigid and unyielding, it may be difficult to reach the cervix. It is a good plan to place the external hand gently upon the lower abdomen in commencing the examination; then, if the cervix cannot be readily reached, gentle pressure should be exerted in the direction of the axis of the pelvic inlet. This will depress the uterus and bring it within touch of the fingers in the vagina.

If the uterus is prolapsed, the cervix will naturally be found nearer the vulva than is normal. Care must be taken to differentiate a prolapsus of the uterus from an elongated or hypertrophied cervix.

After the examination of the cervix as above described, the next step will be to examine the uterus as a whole. The knowledge obtained by the simple vaginal touch of the cervix must be further amplified by the bimanual touch, if one wishes to arrive at a complete diagnosis of the position and condition of the uterus. It is obvious that if a flexion of the uterus exists, the position of the fundus, as indicated by the relation of the cervix to the vaginal axis, will be incorrect.

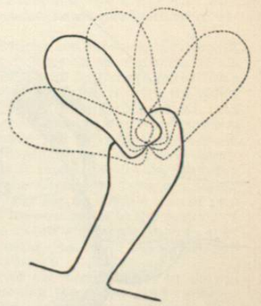

FIG. 2421.—The Relation of the Uterus to the Vaginal Axis in the Different Displacements.

In commencing the bimanual examination the physician

should pass the tips of the vaginal fingers under the cervix, so that it shall rest upon their palmar surfaces. The external hand rests upon the abdomen midway between the symphysis and the umbilicus, ready to make counter-pressure from above.

The management of the external hand is a very important matter. Too vigorous pressure is the rule with the novice, and it will promptly insure failure. Such a procedure will cause the patient to resist to the utmost the rude invasion, by contracting her abdominal and pelvic muscles. It is therefore well to bear in mind, from the very beginning, that in the majority of cases more can be accomplished by gentleness of manipulation and skill, than by physical force. When it is necessary to use deep pressure, it must be done slowly and gradually, so as not to alarm the patient. By the exercise of strategy in distracting the patient's mind from the examination, as by asking questions and by getting her to take deep inspirations, we shall be able to seize the moment when the abdominal muscles are relaxed and gain the desired entrance into the pelvis with the external hand.

The four fingers of the external hand should always be kept close together, and the palmar surfaces of the fingers should be used as much as possible and not the tips. To separate the fingers and to use the tips is decidedly unpleasant to the patient, and will cause her to resist.

The first object of the bimanual examination should be to get the uterus between the two hands, so that it can be palpated. With the cervix resting upon the fingers in the vagina, slight upward pressure in the direction of the inlet of the pelvis is made, while the external hand makes gentle counter-pressure from above, gradually increasing until the fundus of the uterus is reached. This can be told by the fact that the pressure on the fundus is at once communicated to the fingers in the vagina, upon which rests the cervix (see Fig. 2422).

While holding the uterus in this manner, the size and shape of the organ can be judged, and also the amount of mobility that it possesses. The uterus should normally give the impression of being suspended between elastic ligaments. It is movable forward or backward, upward or downward, in response to moderate pressure. On the pressure being removed, the organ should

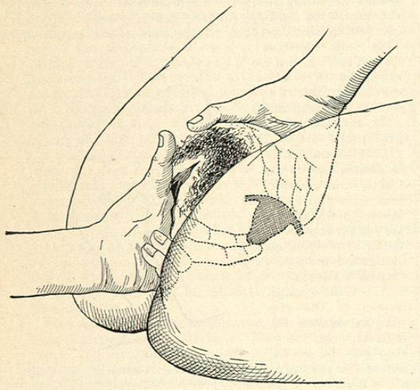

FIG. 2422.—Locating the Fundus and Cervix by the Bimanual Method.

promptly regain its normal position. In examining for the mobility of the uterus in this way, valuable knowledge can be gained as to the presence or absence of adhesions, or of infiltration of the vaginal vault or broad ligaments, which would cause various degrees of fixation of the uterus.

The size of the uterus can be judged after a little practice, as one soon learns the impression that the normal uterus conveys.

Any irregularity on the surface of the fundus uteri, such as might be caused by fibroids or malignant growths, may be determined by the external hand.

The various positions that the uterus may assume must be diagnosed by comparing the relation that the cervix bears to the vaginal axis, and the position that the fundus occupies as determined by the external hand.

If the cervix is at right angles to the vagina, and the external hand discovers the fundus about midway between the umbilicus and the symphysis, the position of the uterus is normal.

Should the uterus be anteverted or anteflexed, it would be necessary to explore with the external hand right up to and behind the symphysis, until the fundus had been located. The position of the cervix would indicate whether the uterus was anteverted or anteflexed, and this could be further confirmed by slipping the vaginal fingers in front of the cervix, when with the external hand on the fundus any sulcus or bend in the organ could be easily appreciated.

Three varieties of anteflexion may be recognized. The body of the uterus may be in its normal relation with the pelvis, while the cervix is bent so as to lie in the axis of the vagina, instead of at right angles to it. This is spoken of as anteflexion of the cervix. The opposite of this condition may exist, the cervix being in its proper position, while the body is bent forward upon the cervix. This variety is designated as anteflexion of the body, in contradistinction to the above. Then again the third variety may occur, in which both cervix and body are out of their normal positions, the flexion being very acute, and the cervix and body closely approaching each other.

When the uterus is displaced or flexed backward, the search for the fundus is made toward the sacral promontory. It is apparent that if the fundus is at or below the level of the promontory, it will be found extremely difficult—unless there is unusual relaxation of the abdominal muscles, or unless we employ a general anæsthetic—to get the uterus between the hands; indeed, in some cases, it is simply impossible to accomplish this.

The fact that the fundus could not be found, and that the cervix was pointing in the axis of the vagina, would be strong presumptive evidence that there was a backward displacement of the organ beyond the sacral promontory.

Retroversion is classified by most authors into three degrees: When the fundus points toward the sacral promontory, it is a retroversion of the first degree. If it points into the hollow of the sacrum, being practically continuous with the vaginal axis, it is the second degree. When the fundus is still lower in the pelvis, and the cervix begins to point upward toward the symphysis, it is classified as the third degree. (See Fig. 2421.) In the second and third degrees of retroversion, it is often impossible to reach the fundus with the external hand by the ordinary method of examining. In such cases the difficulty may be overcome if the uterus be drawn down by a tenaculum, until the cervix is nearly at the site of the hymen. If the index finger be inserted into the rectum while the uterus is drawn down it is frequently possible to palpate the body and fundus with great facility. Kelly's corrugated tenaculum is designed especially for this purpose, as it enables the examiner firmly to hold the tenaculum with the external fingers of the lower hand, while the counter-pressure is made as usual with the upper hand on the abdomen (see Fig. 2423). This method enables the examiner to reach the fundus with both hands.

Retroflexion of the uterus can be differentiated from retroversion by the presence of a distinct sulcus or angle being felt at the junction of the cervix with the body. When a sulcus cannot be felt, and the fundus is out of reach of the finger in the posterior vaginal fornix, it is to be inferred that the uterus is not retroflexed. The

afore-mentioned method of drawing down the uterus will permit this point to be accurately determined, unless adhesions prevent, in which case the diagnosis must be left until it can be settled by the uterine sound or probe.

It is wise always to confirm a diagnosis of flexion by the sound, as a subperitoneal fibroid on either the anterior or the posterior uterine wall will frequently be a cause of deception.

Lateral displacement of the uterus to the right or left of the median line should be carefully noted. A uterus

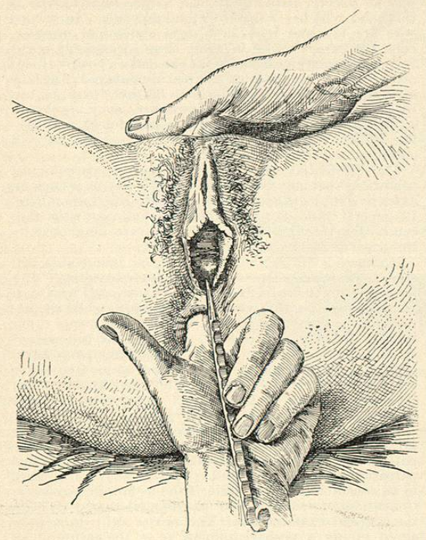

FIG. 2423.—Recto-Abdominal Palpation while Drawing Down a Retrodisplaced Uterus with Kelly's Corrugated Tenaculum.

in such a position has either been drawn over to one side by the contraction of adhesions, or it is pushed over by the presence of a cyst or growth filling the opposite side of the pelvis.

Normally the pelvic organs, with the exception of the ovaries, are not sensitive to ordinary palpation. Deep pressure upon these organs will cause a nauseating pain, accompanied with faintness, similar to that produced by pressure upon the testicles. Tenderness of the uterus will generally indicate disease of that organ, as endometritis or metritis, although there is a certain class of patients whose organs, even when not appreciably diseased, manifest an abnormal degree of hyperæsthesia. Pelvic sensitiveness is one of the prominent symptoms of an hysterical patient.

One of the most important items of information to be derived from the examination is the consistency of the uterus and the surrounding structures, as determined by the sense of touch. Each structure has its own standard, and the examiner must first become thoroughly familiar with the normal consistency before he can appreciate deviations which indicate pathological changes. The soft, friable condition of a carcinomatous cervix, the boggy impression conveyed by a subinvoluted or œdematous uterus, the hard plaster-of-Paris-like feel of the vaginal vault in pelvic peritonitis, the fluctuating sensation of a fluid tumor or abscess, are but a few of the conditions which must depend upon a comparison with the normal for their diagnosis.

After the examination of the uterus has been completed, the attention should next be directed to the ligaments which aid in its support. These ligaments are prone to inflammatory thickening, which may give rise to pain, and which frequently interferes with the normal mobility of the organs.

The anterior, posterior, and lateral fornices of the vagina are to be palpated to ascertain the condition of the utero-vesical, utero-sacral, and broad ligaments. Normally the vaginal vault is elastic to the touch, and should induration and thickening of the ligaments be present, these conditions can usually be made out by palpation.

The vaginal fornices must be carefully explored by bimanual touch, for the presence of cysts, growths, prolapsed ovaries, collections of fluid, etc., which may occupy the cul-de-sac of Douglas or the utero-vesical space.

By comparing one lateral fornix with the other, as regards the ease with which the examining fingers may be moved in different directions, and also by comparing the two sides as regards the degree of pain elicited by pressure, one may obtain considerable information in regard to the pathological conditions that may be present.

It is not possible in a limited article like the present one to do more than hint at the diagnosis of the many complicated conditions which will be found in examinations of the vaginal fornices. It is hardly necessary to say that years of experience may be required before it is possible for one to acquire the *tactus eruditus* necessary to ascertain, by digital exploration, the pathological conditions that are present in the pelvic cavity in any given case. The most expert gynæcologists not infrequently see, on opening the abdomen, that their diagnosis was at fault. A thorough appreciation of the normal condition of the parts will enable the novice more readily to recognize pathological deviations, and especially is this true of the uterine appendages. It is a frequent occurrence, in the writer's experience, to come across men, in active general practice, who state that the palpation of the uterine appendages is a closed book to them. Diagnosis of diseases of these important organs is entirely beyond their reach for the reason that they cannot feel the adnexa, although they repeatedly examine cases in their practice. They can often make a diagnosis as to the position of the uterus, the condition of the cervix, or the pelvic floor, but the condition of the ovary and tube is like the "will-o'-the-wisp;" it easily evades the simpler methods of examination.

In examining for the ovaries and tubes, the novice will frequently attribute his failures to the shortness of his phalanges, and he will endeavor by pure physical force to gain further entrance into the pelvis, with the result that he causes needless pain to the suffering patient. As she is frightened by fears of worse pain to come, she sets to the utmost her abdominal and pelvic-floor muscles, in order to resist the rude invasion with which she is threatened, and thereby makes it impossible for the examiner to get within reach of the adnexa with his examining fingers. The novice usually has no definite plan of procedure in his mind, and his one idea as to the position of the ovary is, that it lies on one side of the uterus at or near the plane of the fundus, just as he has seen it pictured so often in his text-books.

A careful observance of the preliminaries to the examination—such as loosening the corsets and clothing, emptying the bladder, etc.—is essential to success. It is well to remember that it is easier to reach the left appendage with the left hand in the vagina, and the right appendage with the right hand.

The first step necessary to the palpation of the adnexa is to locate the fundus of the uterus, as with the fundus as a guide the location of the appendages is made easier. This is done after the manner previously described and shown in Fig. 2422. After the cervix and the fundus of the uterus have been located, the next step is to remember that the tube and ovary, unless bound down by adhesions, are *movable*, as can well be brought to the exam-