The Pathology and treatment of displacements of the uterus / by B.S. Schultze ; tr. from the German by Jameson J. Macan ; and ed. by Arthur V. Macan ; with one hundred and twenty illustrations.

Contributors

Schultze, Bernhard Sigmund, 1827-1919.
Macan, Jameson J.
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Publication/Creation

New York : D. Appleton, 1888.

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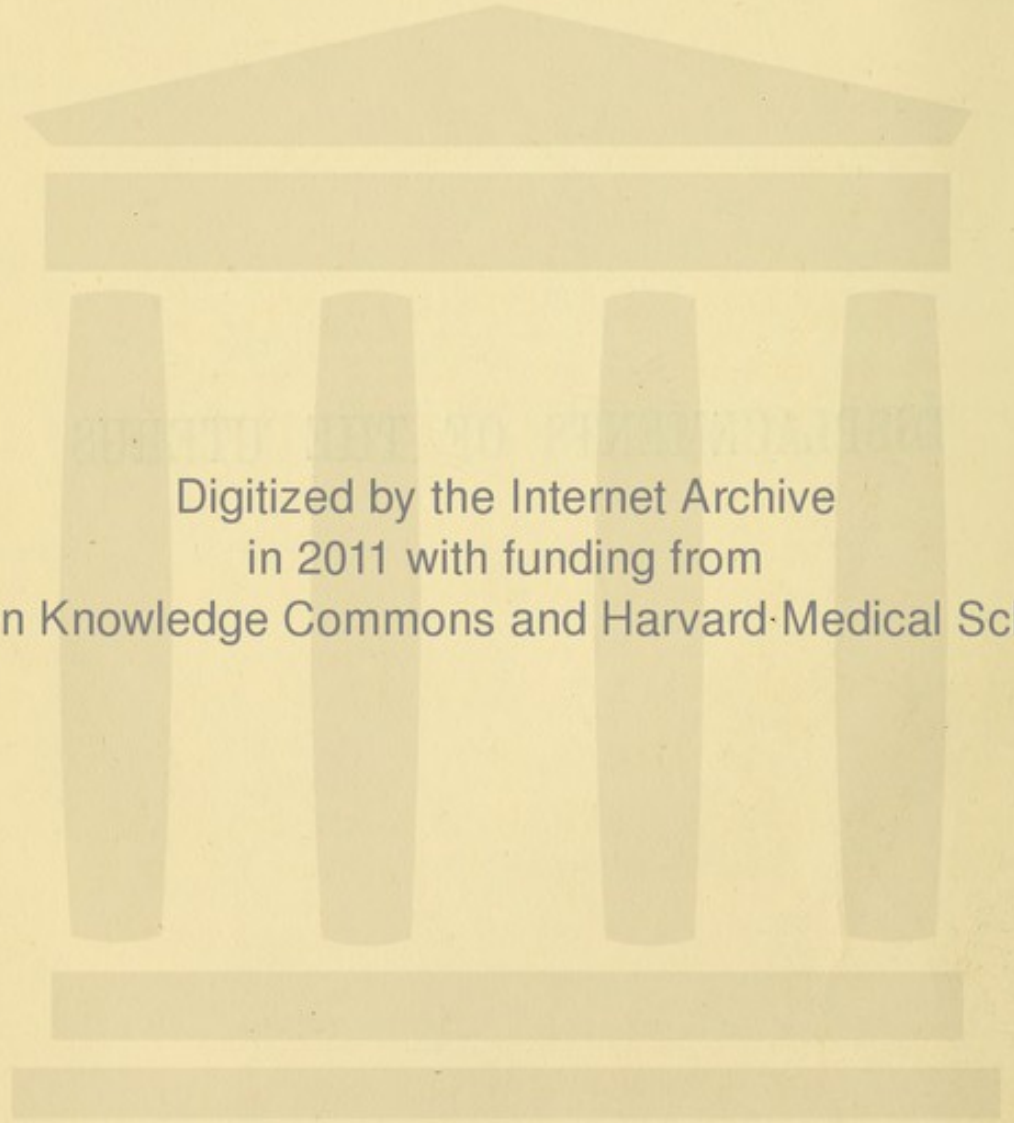
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DISPLACEMENTS OF THE UTERUS



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THE

PATHOLOGY AND TREATMENT

OF

DISPLACEMENTS OF THE UTERUS

BY

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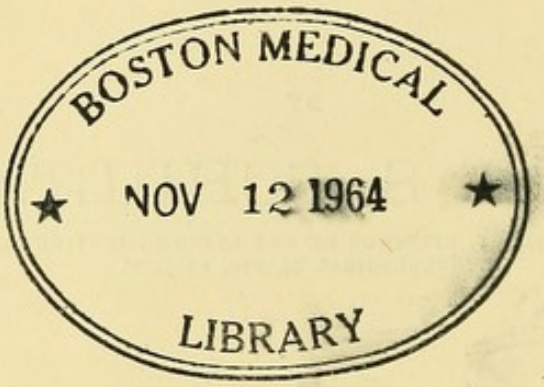
WITH ONE HUNDRED AND TWENTY ILLUSTRATIONS

NEW YORK

D. APPLETON AND COMPANY

MDCCCLXXXVIII

24. N. 11



PREFACE BY THE EDITOR.

On the publication of the original German edition of this work some years ago, the views therein put forward met with the most violent opposition. Adverse criticism has, however, only tended to show how accurate the observations were on which such views were founded, and how impossible it was not to admit the truth of the deductions drawn from them. It may in fact be said that this book has revolutionised the opinions held as to the pathology and treatment of uterine displacements by most of the leading gynecologists on the continent, and it was with the hope of making this revolution more felt in other countries, than it hitherto has been, that the translation was undertaken.

In a note on page 261 will be found a short criticism by Prof. Schultze, on the shortening of the round ligaments, for cases of prolapse and retroflexion, known in this country as Alexander's operation, and on laparotomy, with fixation of the uterus to the anterior abdominal wall, and he has expressed his belief in the efficacy for the cure of prolapse and for promoting the absorption of peri-uterine exudations, of the systematic use of massage and the so-called "uterine gymnastics," introduced to the notice of the profession and developed into a system by Major Thure Brandt, of Christiania, in a short preface to a pamphlet by Dr. Profanter, on "*The Use of Massage in Gynecology,*" and in his preface to this translation.

With the exceptions mentioned in the latter, the diagnosis and treatment of displacements of the uterus is very much the same to-day as when Prof. Schultze's work first appeared.

It would perhaps be too much to expect that the truth of the views here put forward, should be at once acknowledged in all countries, but their acceptation will assuredly come. In the meantime our gynecologists cannot but be influenced by such an example of patient and careful observation, while the illustrations which the book contains must tend to raise the standard of accuracy for all future gynecological publications.

To the translator my best thanks are due for the great time and trouble which he has expended on the work, and for the patience with which he has entertained any suggestions or alterations which I have ventured to propose.

A. V. MACAN.

Rotunda Hospital.
October, 1888.

AUTHOR'S PREFACE TO THE ENGLISH TRANSLATION.

It was natural that my views on the displacements of the Uterus, especially on the points of view from which the proper indications for their treatment must be obtained, should at first meet with much contradiction, for they were opposed to the ideas that then prevailed. These views though now widely acknowledged are still far from being universally accepted by physicians, I therefore welcome the English translation of my book with very great satisfaction.

The opinions I laid before the profession in this work, I had already submitted to several years practical proof. I can now add, that during the years that have since passed, my experience among a large number of suffering women has every day brought fresh confirmation of the correctness of the opinions and principles I then enunciated.

Two improvements in the treatment of displacements have been made since this book first appeared, which I will here mention.

In regard to those displacements which essentially depend on relaxation of the muscular attachments of the uterus—that is to say in many cases of retroflexion and prolapse—our therapeutics have been enriched by the knowledge of Thure Brandt's method of mechanical treatment.

Secondly, for the retention of the uterus after reposition, the rings I now use are made of pure celluloid instead of wire and india-rubber as I formerly recommended. These rings are made by the Rhine India-rubber and Celluloid Manufactory at

Mannheim exactly according to my instructions; when softened in hot water they may be bent into the shape suitable for any particular pathological case, and after they have stiffened in the form given them by the physician have all the lightness, smoothness, finish and cleanliness of vulcanite. To my professional brethen in England and America, I would, with the cordial greeting of a colleague, express the hope that, for the welfare of womankind, the displacements of the uterus may continue to become more and more generally understood and correctly treated.

B. S. SCHULTZE.

JENA. October 15th, 1888.

AUTHOR'S PREFACE.

THE attention of gynecologists has lately been so much absorbed by the important advances made in the operative treatment of those forms of disease peculiar to women that some other departments of our specialty have been thrown a little into the shade. With regard to displacements of the uterus this result has not been altogether unwelcome. From 1850 to 1870 and perhaps even down to 1880, expectations were entertained in many quarters of great results from the "orthopædic" treatment of the uterus, as practised during that period, but these expectations have not been realized. On the contrary the conviction has apparently been gaining ground that this treatment was not based on the requisite etiological knowledge, and that the knowledge of the normal position of the uterus, indispenable as a foundation for any proper plan for the correction of its anomalous positions, was to say the least very uncertain.

The advances in operative surgery have, however, materially improved the treatment of some of the displacements of the uterus. The operations for prolapse, for hernia, and for inversion have been developed to much greater perfection. But most of the displacements of the uterus, like the larger number of affections of the female organs of generation, are out of the reach of the operating knife.

While the more serious gynecological operations are as a rule performed in hospitals and clinical institutions by gynecologists or surgeons whose specialty they are, the treatment of the vast majority of women suffering from genital disorders, of which

displacement of the uterus is one of the most common, forms part of the daily routine of the general practitioner.

Our knowledge of the displacements of the uterus has been greatly improved by more accurate ideas of its normal position, and by the constantly increasing practice of the bimanual palpation of the organs situated in the pelvis, under normal and under pathological conditions. With the better knowledge thus attained of their immediate and remote causes it has become possible to lay down more rational and precise indications for treatment and the results have become correspondingly greater and more certain.

The object of the present treatise will be attained if the following pages contribute to make the displacements of the uterus better known, and more frequently recognized and justly appreciated in ordinary practice and if they give my colleagues more confidence in the successful treatment of these affections.

B. S. SCHULTZE.

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ERRATA.

Page 112 *for* "§ 69" *read* "§ 67."
,, 179 3 lines from bottom, *for* "sulphur" *read* "brine."
,, 196 under figure 60, *for* "retroversion" *read* "retroflexion."
,, 202 fig. 62, *for* "retroflexion" *read* "retroversion."
,, 263 line 11, *for* "vagina" *read* "vaginal."
,, 272 6 lines from bottom, *for* "ante-" *read* "retro-."
,, 286 insert "§ 186" before "In most cases."
,, 290 § 190, *for* "elytrorhaphy" *read* "elytrorrhaphy.

DISPLACEMENTS OF THE UTERUS.

Part I.—GENERAL PATHOLOGY.

Chapter I.

THE NORMAL POSITION OF THE UTERUS.

§ 1. *The normal position of the uterus.*—Before the deviations, in other words, the pathological displacements of the uterus can be properly discussed, its normal position must be determined; no definition of any of the former can be made except on the basis of distinct conception of the latter. Now, the opinions that are current as to the position that the uterus occupies under normal circumstances are very various, and differ so greatly, and in a way of such practical importance, from each other, that the very same position that is looked upon as normal by one gynecologist, is by another considered as pathological and treated accordingly. Hence it is quite evident that we must try and obtain as accurate an idea as possible of the normal position of the uterus before we enter on the consideration of its pathological deviations.

§ 2. *Attachments of the uterus.*—The position of the uterus is decided principally by its tissue-connections with the neighbouring parts.

1. The muscular and connective tissues of the vagina are directly continuous with the same tissues of the uterus; and the rigidity of the vagina and its immediate surroundings, as well as of the muscular tissue and fascia of the pelvic floor, is an essential factor in securing the position of the uterus.

2. Certain strong and well-defined bundles of fibres in the superior inter-muscular aponeurosis, the so-called fascia pelvis, which pass from the neck of the uterus, over the bladder in front and across the rectum behind, to the anterior and posterior walls of the pelvis on either side, are known as the ligamenta pubo-vesico-uterina and utero-sacralia respectively

Although this attachment of the uterus in the fascia pelvis embraces only the upper part of the cervix, it confines the movements of the organ in every direction, within certain defined limits.

3. For a distance of about 2 cm. the anterior surface of the cervix and the posterior wall of the bladder are united by connective tissue, and though this connective tissue is described by anatomists as being of the looser variety, it is practically of importance to remember that this connection of the uterus with the bladder is very rarely disturbed to any great degree. Not only does the uterus closely follow the posterior wall of the bladder in the movements due to the variations in the quantity of urine contained in it, but the bladder also follows the anterior wall of the uterus so closely, when the latter organ is displaced or enlarged, that the relation of the posterior wall of the bladder to any tumour in or above the pelvis is of great diagnostic importance, whenever there is any doubt as to the share the uterus has in the formation of the tumour.

4. The peritoneum, which invests the upper free part of the uterus, passes from the anterior surface of the organ on to the bladder at the level of the inner os; from the posterior surface it passes on to the vagina and thence to the rectum, while on either side it is continued in broad folds from the lateral edges of the uterus to the side walls of the pelvis. Though these peritoneal attachments are very extensible they materially influence the position of the corpus uteri.

5. These folds of peritoneum contain muscular bands arising from or inserted into the uterus, and in the ligamenta rotunda and ligamenta Douglasii, at the anterior and posterior edges of the folds, these bands are particularly well developed. The former ligaments pass on each side from the fundus uteri, near the insertion of Fallopian tube, to the internal abdominal ring on the same side, and then through the inguinal canal to be inserted into the cellular tissue of the mons veneris; their action is to draw the fundus uteri towards the anterior abdominal and pelvic walls. From the posterior surface of the uterus, a little below the junction of the cervix to the body of the organ, the muscular bands in the folds of Douglas pass to the lateral parts of the sacrum, nearly at the level of its second

vertebra. The upper, so-called posterior, insertion of these muscular bands varies considerably, though it would seem that they always lose themselves in the muscular wall of the rectum, and in the subserous connective tissue. The anterior or lower insertion is formed by some muscular fibres from each side coalescing behind the uterus and forming a single unique muscle, called by Luschka the musculus retractor uteri.

The estimates formed by anatomists of the strength of the muscular tissue in Douglas' folds vary very considerably, but it must be remembered that pathological processes may cause atrophy of this tissue, and such pathological processes are, judging from my clinical experience, extremely common, though they have not as yet been proved to be so by anatomical evidence. In the gravid, or still better in the puerperal uterus, it may easily be ascertained by a digital examination per rectum, that the normal hypertrophy of the muscular tissue of the uterus extends to that of the folds themselves.

Both the contractile and elastic elements of the folds of Douglas, by drawing the cervix uteri towards the sacrum, tend to secure it in the back part of the pelvic cavity. When the woman is in the upright posture the course of these folds from the uterus is upwards and outwards, and they might very appropriately be called the suspensory ligament of the uterus, and the muscle contained in them the elevator rather than the retractor of the uterus. Their course, and the direction in which they act, is represented in figure 46.

The various attachments already described are the primary factors in deciding the position and limiting the mobility of the uterus. Its position is, however, further determined by the action of its own weight, by that of the superincumbent intestines, by the contents of the rectum and bladder, and by the intra-abdominal pressure.

The influence of all these factors, which are subject to great variations, on the position of the uterus will be exhaustively discussed hereafter; I would, however, here draw particular attention to the fact, that the greater number of the anatomical attachments, and those the very ones that are the most rigid, are connected to the upper segment of the cervix uteri. The corpus uteri and portio vaginalis are comparatively free.

In many of the movements of the uterus the insertion of the cervix in the pelvic aponeurosis constitutes the fixed point—the punctum fixum or axis of suspension of many authors. But it must not be imagined that this centre or axis of rotation is itself immovable. Not only is its position in the pelvis often completely altered by pathological conditions, but it is subject to considerable daily displacements under perfectly normal circumstances.

§ 3. *The position of the normal uterus in the dead body.*—In the dead body, great passive mobility is the most constant condition of the normal uterus, which is not always found in the same position, but generally lies with its posterior surface in contact with the posterior wall of the pelvis or the anterior surface of the rectum. As this position is the one generally met with in median sections of frozen bodies, it has naturally been looked on as the position normal in the living woman, some thinking it not only normal but constant (Claudius); while according to others in the living as in the dead body the position of the uterus, as a necessary result of its own weight, varies according to the position of the body itself (Hasse). The improbability of such opinions being true is at once evident when it is considered that every factor in the position of the uterus which depends on muscular action, even intra-abdominal pressure itself, is destroyed by death, and that—irrespective of the position of the uterus during life—a retro-position existing after the dead body has been lying for days in the dorso-horizontal position, may have been caused by the weight of the organ itself, the passive mobility of which after death is so great.

In my earlier works I have critically examined the conclusions that have been drawn as to the normal position of the uterus during life from the position in which it is found in the dead body, and have discussed the value of the condition after death in estimating the position of the uterus in the living woman; referring to these works I will only mention here two important observations published by Hack.

Twenty-four hours after death in the one case, where the uterus during life was anteflected, he found retro-flexion; in the other, in which before death there was extreme anteversion, he found the uterus retroverted, the bladder being empty in each

case. Such facts are of daily occurrence, though their observation is rare.

Now that the complete palpation of the uterus of a living woman is known to be possible, our conception of its normal

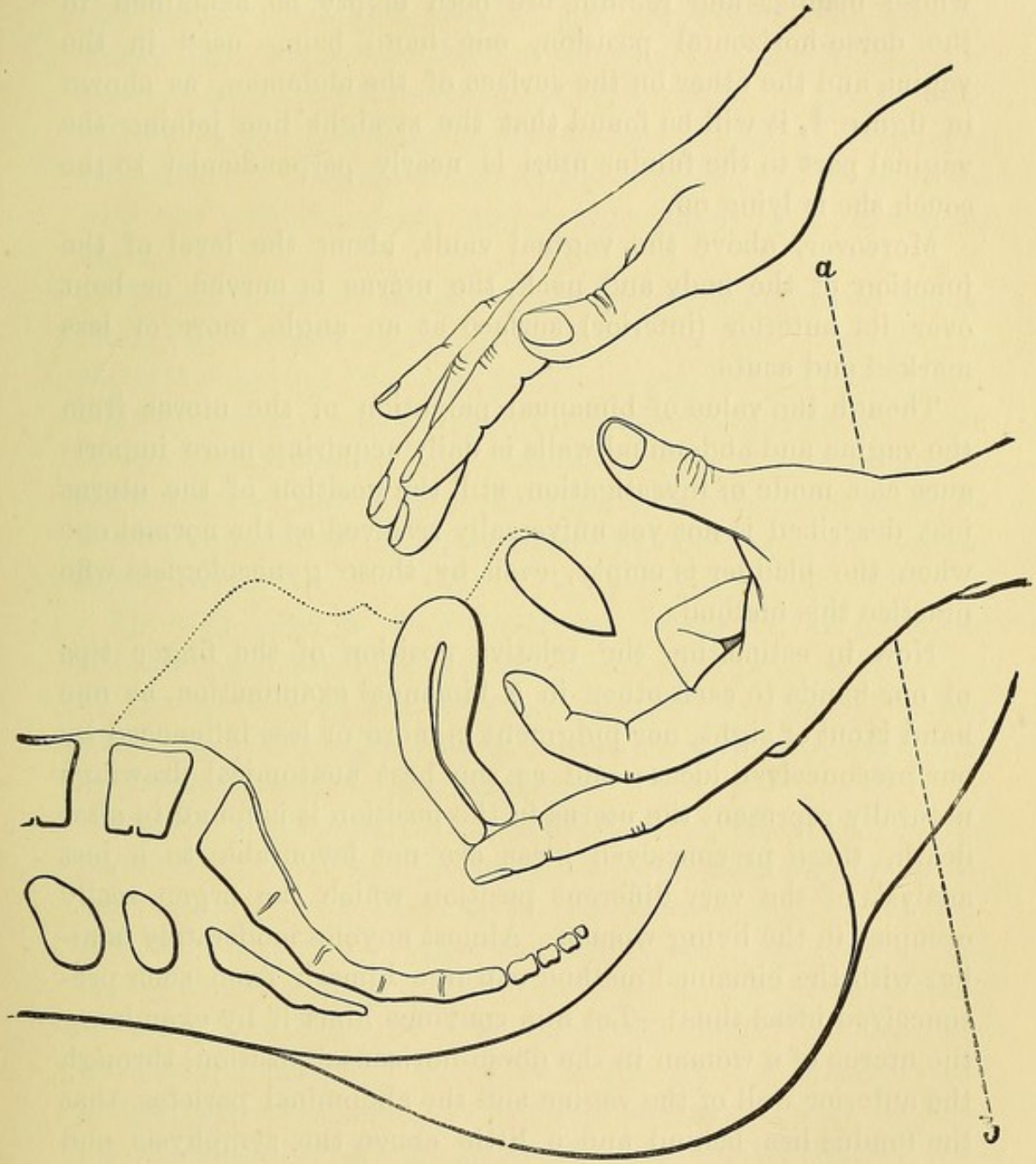


FIG. 1.—Diagram of the bimanual palpation of the uterus. The line *ab* would be horizontal in the upright posture.

position need no longer be a theoretical one depending on our knowledge of its means of attachment, nor need we consider the condition in the dead body as determining the position that existed during life. By direct examination of the living woman

we can satisfy ourselves as to the situation of the uterus, the extent of its normal mobility, the conditions that influence its position, and the way in which they do so.

§ 4. *Conditions found during life.*—If a healthy woman whose bladder and rectum are both empty be examined in the dorso-horizontal position, one hand being used in the vagina and the other on the surface of the abdomen, as shown in figure 1, it will be found that the straight line joining the vaginal part to the fundus uteri is nearly perpendicular to the couch she is lying on.

Moreover, above the vaginal vault, about the level of the junction of the body and neck, the uterus is curved or bent over its anterior (inferior) surface at an angle more or less marked and acute.

Though the value of bimanual palpation of the uterus from the vagina and abdominal walls is daily acquiring more importance as a mode of investigation, still the position of the uterus just described is not yet universally received as the normal one when the bladder is empty, even by those gynecologists who practice this method.

Now in estimating the relative position of the finger tips of our hands to each other in a bimanual examination, as one hand is out of sight, our judgment is more or less influenced by our preconceived ideas; and as the best anatomical drawings naturally represent the uterus in the position it is found in after death, these preconceived ideas are not favourable to a just analysis of the very different position which the organ really occupies in the living woman. Almost anyone moderately familiar with the bimanual method can free himself from such preconceived ideas thus:—Let him convince himself by examining the uterus of a woman in the dorso-horizontal position, through the anterior wall of the vagina and the abdominal parietes, that the fundus lies behind and a little above the symphysis, and mark the position of the fundus thus found, by a simple point on a diagram of the pelvis, drawn as correctly as possible to scale; let him then by examining the vaginal part per rectum, make sure that it lies with the os uteri facing the rectum, and having ascertained which of the sacral vertebra is opposite to the os uteri, let him mark the position of this vertebra on the

sacral integument. The thickness of the parts between the vaginal part and the corresponding point on the sacrum, which, when the bladder and rectum are both empty, is very seldom more than 3 cm., must then be measured with a suitable pair of compasses, of which one leg is introduced into the vagina, and this point marked in the diagram. If a straight line now be drawn from it to the point representing the fundus uteri, this line will, if the diagram of the pelvis be held at the proper inclination, be nearly horizontal, that is to say, will correspond with the position of the uterus represented in figures 1, 5, and 6.

We can, however, determine the position of the uterus still more exactly by means of a sound and a goniometer. The shape of the uterus having been ascertained by palpation, a corresponding curve is given to a flexible but inelastic sound, the stem of which is graduated. The inclination of the woman's pelvis to the horizon at the time of the examination must, however, be exactly determined before we proceed to ascertain the position of the uterus.

The only plane in the living woman which can be made use of for this purpose, is one resting on the anterior superior spines of the ilia and on the spines of the pubes, a plane, which, according to Hermann Meyer, is pretty nearly perpendicular in the unconstrained upright posture.

Even on an absolutely horizontal examining couch we must not take it for granted that this plane is horizontal, or very nearly so; the voluntary power of flexion in the lumbar region is so considerable, that such a supposition might cause an error of 20° or 30°, or even more. The inclination of this plane marked *ab* in fig. 4, is estimated in the following manner. A board, cut out for the abdomen as shown in fig. 2, is set firmly on the points just mentioned, the woman being comfortably disposed for examination, and the angle which it makes with the horizon is read off by means of the goniometer. This instrument (fig. 3) consists of a semi-circular plate of ivory, graduated at the circumference, which is suspended by a centre upon a rectangular stand, and is so weighted, that in every position of the instrument, as long as the spring placed underneath it is depressed, the zero of the scale gravitates directly down-

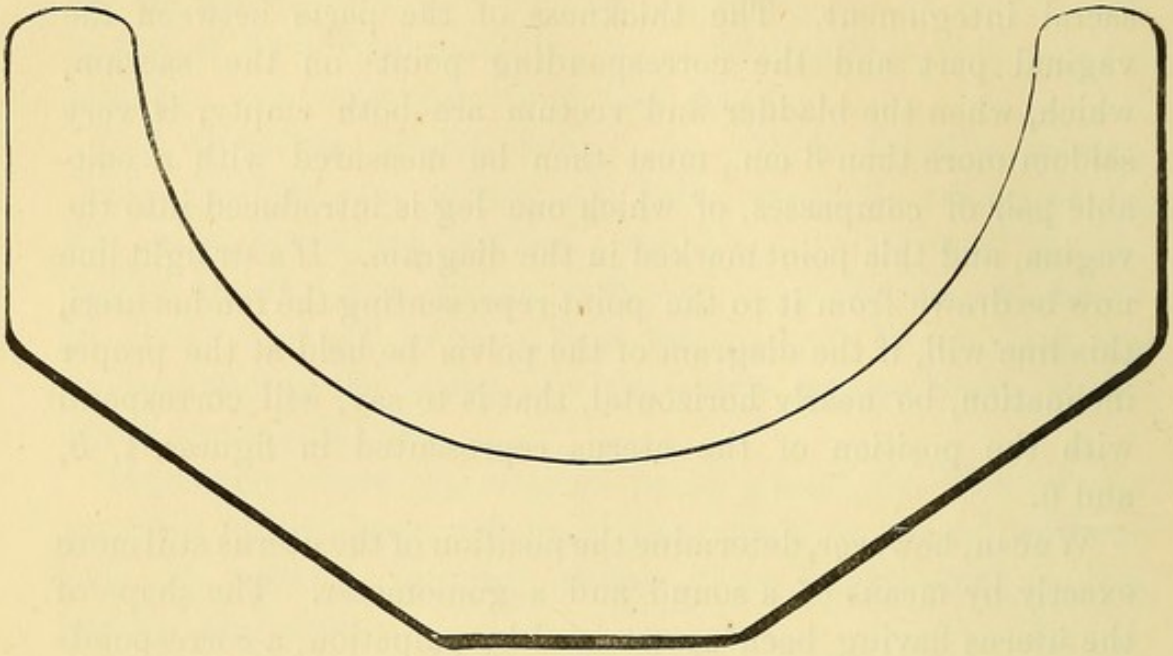


FIG. 2.—Board for determining the inclination of the pelvis to the horizon.

wards; this spring when released fixes the graduated plate, and shows by an index the degree to which the base of the instrument varies from the horizontal at the time. The posi-

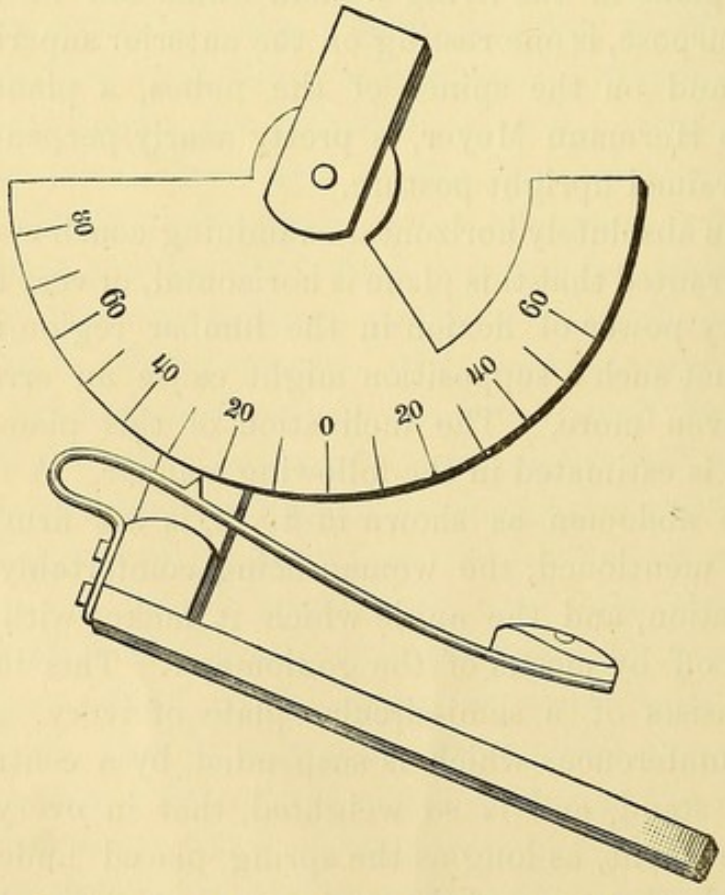


FIG. 3.—Goniometer for estimating inclinations to the horizontal plane.

tion of the woman remaining unaltered, a sound, guided by two fingers which press the perineum forcibly backwards, is now passed into the uterus, if possible without moving it, and more especially the corpus uteri, in any way.

The inclination of the straight projecting handle of the sound to the horizon is read off by the same goniometer, and the distance to which the sound passes into the genital canal is read off on the centimetre scale which reaches to the handle, while at the same time it is ascertained by another scale how far below the urethral orifice the stem of the sound cuts the introitus vaginæ.

If from these measurements, a figure of the sound is then laid down on an accurate life-size diagram of the pelvis, the superior 7 cm. of the sound thus drawn, shows the exact position of the cavity of the uterus at the time of examination.

The possible sources of error in this method, which affords us the most correct representations not only of the normal but also of the anomalous positions of the uterus, and the precautions to be adopted in practising it are described in the *Centralblatt für Gynaekologie*, 1878, no. 11.

§ 5. *Normal movements of the uterus.*—If at the time of examination the woman has retained her water for about four hours, so that her bladder is pretty full, the fundus uteri will no longer be found on bimanual palpation in the position shown in fig. 1. Provided the rectum be nearly empty, the abdominal walls well relaxed, and the adipose tissue not too thick, we shall be able to feel the fundus uteri behind the crown of the distended bladder, lying considerably nearer the promontory, at about the centre of the pelvic inlet, or even further back. If now the bladder be emptied by a catheter, the position of the woman meanwhile being unchanged, the fundus uteri passes into the position shown in fig. 1, and the uterus is at the same time bent, at about the level of the inner os, more or less over its anterior surface. In spite of the action of its own weight, unburdened by that of the intestines, in a position of the body in which intra-abdominal pressure is small compared with the erect posture, without the action of the abdominal muscles usually connected with the emptying of the bladder, the uterus passes

into anteversion and anteflexion combined. It can be easily ascertained practically, as need hardly be said, that when the bladder is emptied in an erect or crouching posture, and under the action of abdominal straining, the occurrence of this change in the form and position of the uterus is still more decided.

Cases are met with, almost pathological in their nature, in

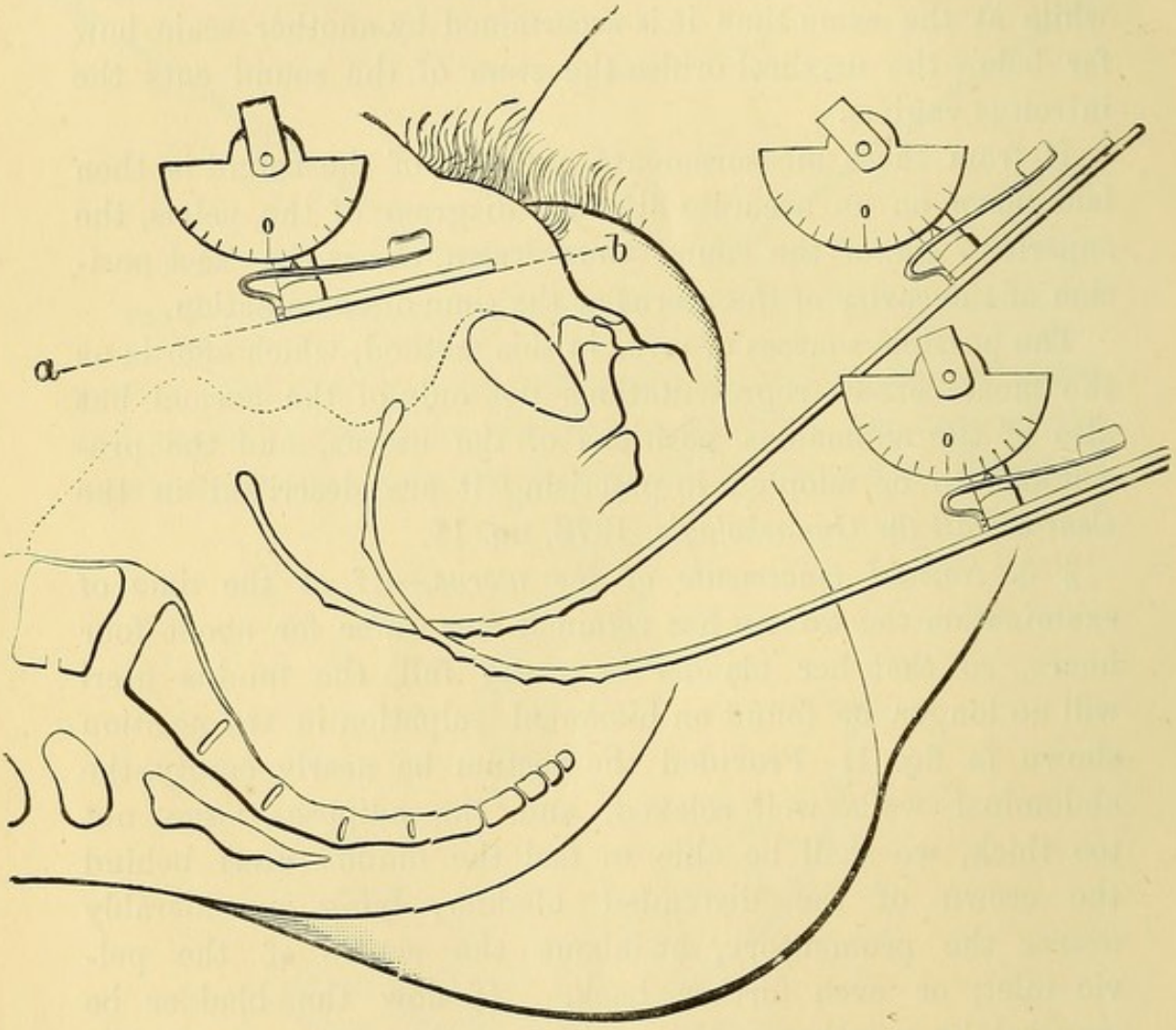


FIG. 4.—Determination by the sound and goniometer of the angle described by the fundus uteri in consequence of the emptying of the bladder.

which, although the uterus passes immediately into anteversion when the bladder is emptied while the woman is standing up, it does so but sluggishly when it is emptied while she is in the dorso-horizontal position: when, for example, the bladder has been immensely distended, the anteversion of the uterus is delayed or does not take place.

If the amount of urine accumulated be moderate the fundus uteri describes, during micturition, a curve corresponding to an angle of from 45° to 60°. A tolerably accurate representation of this angle may be obtained by ascertaining the position of the corpus uteri with the sound and goniometer in the manner described, first when the bladder is full and again when it is empty. Fig. 4 shows the result of two such observations, between which the woman passed 330 cm. of urine in her usual posture. In consequence of the anteflexion the uterus is subject to during the emptying of the bladder, such an alteration must be made in the curve of the sound, for the second observation, that it can be passed into the uterus without any difficulty; and if the woman has changed her position between times, the inclination of the plane *ab* of the pubes and spines must be again determined before the second measurement.

Even if in introducing the sound we take all the care that has been shown to be necessary not to disturb the position of the corpus uteri, in a certain number of cases, especially in those of decided flexion, some stretching of the cervix cannot be avoided; for if the instrument be bent to the exact shape corresponding to an anteflexion of the uterus, its introduction becomes impossible. This investigation does not afford any conclusions as to the position of the cervix nor of the degree of flexion of the uterus, such as may be drawn, though not with mathematical accuracy, from digital palpation.

§ 6. The degree of flexion that takes place when the bladder is emptied, depends not only upon the flexibility of the uterus, but also upon the length of the vaginal part, and, when this length is considerable, upon the stiffness of the vaginal walls. These three conditions exhibit considerable variations in perfectly normal cases.

When the vaginal portion is long and the vagina itself tense, version of the uterus is made difficult by the fixation of the cervix, which consequently cannot easily accommodate itself to the movements of the corpus uteri.

As regards the flexibility of the uterus, I must in the first place say that it is much greater than is generally supposed.

Considerable dexterity is required to ascertain the amount of flexibility by bimanual palpation, but if the index and middle

finger of one hand are placed before and behind the vaginal portion, and a movement backwards and forwards is given to the corpus uteri by the other hand through the abdominal walls, some skill in estimating it is soon acquired. As a matter of fact the flexibility is very much greater in the living woman than in the dead body. Indeed, I have been reproached with considering the flexibility and normal flexions of the uterus as much greater than they really are; but while the prevailing opinions are derived from the condition found after death, I refer only to the condition during life.

The uterus is more flexible in childhood than after puberty, before pregnancy has taken place than afterwards. Between the diminished flexibility normal after childbed and the increasing degree of pathological rigidity there is no defined limit.

The greater flexibility of the virgin uterus is a sufficient reason for the fact that, *cæteris paribus*, the virgin uterus is more acutely flexed than that of a woman who has been a mother; moreover in the former case the vagina is generally shorter, and the insertion of the uterus into the vagina more rigid, than in the latter.

In consequence of these anatomical differences, the change in the direction of the genital canal caused by the emptying of the bladder generally takes place in the virgin at the junction of the body and neck of the uterus, while in a woman who has had children it more often happens at the insertion of the uterus into the vagina: the forward movement of the fundus uteri leading, as a rule, in the former case to anteflexion, in the latter to anteversion.

Figs. 5 and 6, which are diagrams of median sections of the pelvis during life, drawn in the manner hereafter more fully described in § 13, illustrate this difference. The rectum, bladder, and vagina are represented in an empty condition—just sufficiently open to show their cavities: the uterus is in the position that is normal when the bladder is empty, the characteristic point of which is, that the corpus uteri is in contact with the upper surface of the bladder, whatever the amount of flexion. A careful bimanual examination (fig. 1) would certainly detect any loop of intestine lying between them, but it is only in the most exceptional cases that such a thing is found, and it

then quickly slips away. The fundus uteri points towards, but it is not in contact with, the anterior abdominal wall, from which it is separated by intestines. The uterus is drawn as if bisected longitudinally and projected on the median plane, though as a rule this section of the uterus does not actually coincide with the median section of the body; for the uterus normally lies in slight torsion to the right the vaginal portion being to the left and the fundus to the right of the median plane, as may be seen in fig. 11.

The whole of the superior or so-called posterior wall of the uterus, and if the upper part of the rectum be empty, the posterior wall of the cervix and the small segment of the vaginal vault which is invested with peritoneum, are in contact with convolutions of the intestines. The more empty the rectum and the more insignificant the flexion of the anteverted uterus, the more widely does Douglas' pouch open upwards. The fact that it is very rarely that a loop of intestine can be detected in Douglas' pouch by simultaneous palpation with two fingers (thumb and index) in the vagina and rectum, may well be accounted for by the normal shortness and rigidity of the peritoneal lining of the pouch and the great mobility of the small segments of intestine in contact with it.

The angle the cervix uteri makes with the vagina, when the bladder is empty and the fundus lying normally forward, varies very considerably within the limits of perfect normality. In fig. 5 it is nearly a right angle, and this may be held as the average inclination in the virgin state.

But if the vagina be very rigid and the vaginal part of some length, the angle between the cervix and vagina is much greater (much more obtuse), amounting to one and a half right angles or even more, and consequently the angle of flexion between cervix and corpus uteri when the bladder is empty is much smaller (more acute). This does not, however, cause any disturbance of function of the uterus nor any interference with the capability of conception as I have had very many opportunities of assuring myself.

Laxity of the vaginal vault and inflexibility of the uterus are conditions commonly met with in women who have borne children, and the angle that the cervical canal makes with the

lumen of the vagina when the bladder is empty, is more acute in proportion as these conditions are more pronounced, as is shown in fig. 6 (compare with figs. 48, 49, 50).

With a view to represent in the two normal diagrams the

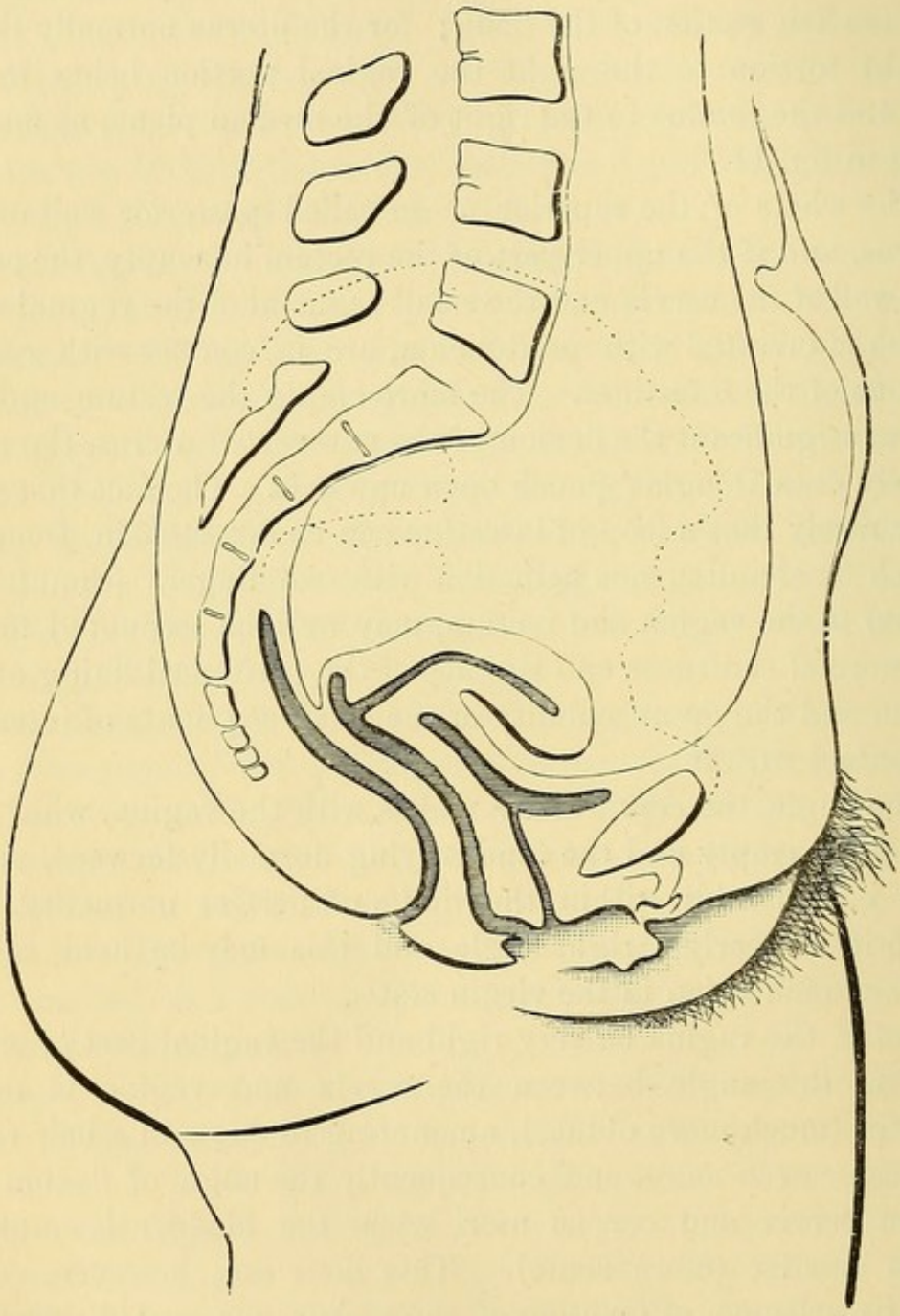


FIG. 5.—Anteflexion of the *virgin* uterus when the bladder is emptied.

numerous individual variations of form, I have not only given less inclination to the pelvis in fig. 6 but have there shewn the muscular tissue as more relaxed, and the adipose tissue more developed, than in fig. 5.

§ 7. *Normal displacements of the uterus* are also caused every day by the distension and evacuation of the rectum. The column of fæces as it is forced through the rectum necessarily pushes

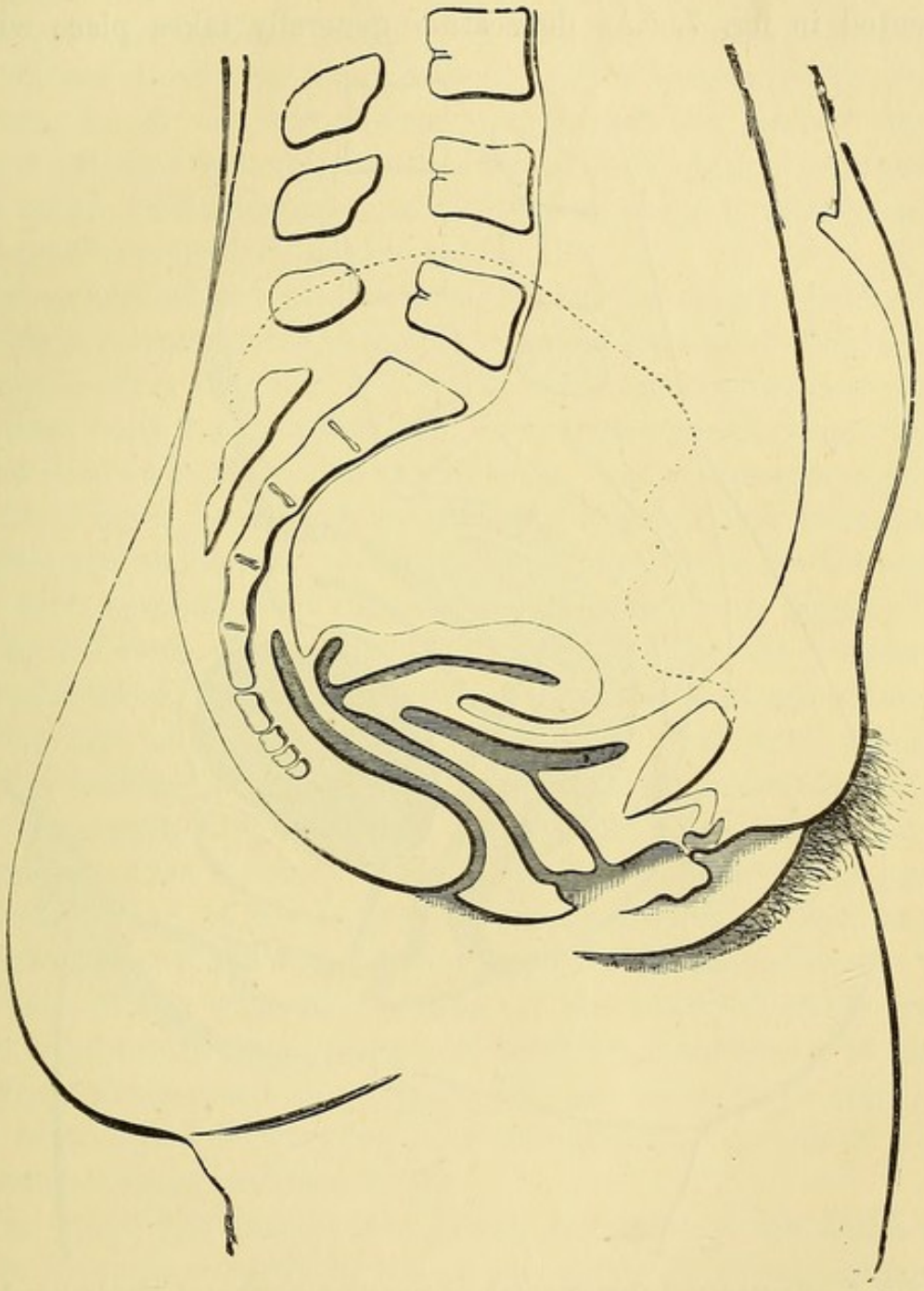


FIG. 6.—Anteversion of the uterus of a woman who has borne children when the bladder is emptied.

the vaginal portion forwards; and if the bladder be empty and the uterus very flexible, the existing anteflexion is thereby increased, while if the uterus be not very flexible the whole

organ is displaced forwards. If, however, the bladder be distended when the stool is passed, no considerable flexion or displacement forwards can occur, and the uterus is erected and elevated by the passage of the fæces downwards, as is represented in fig. 7. As defæcation generally takes place when

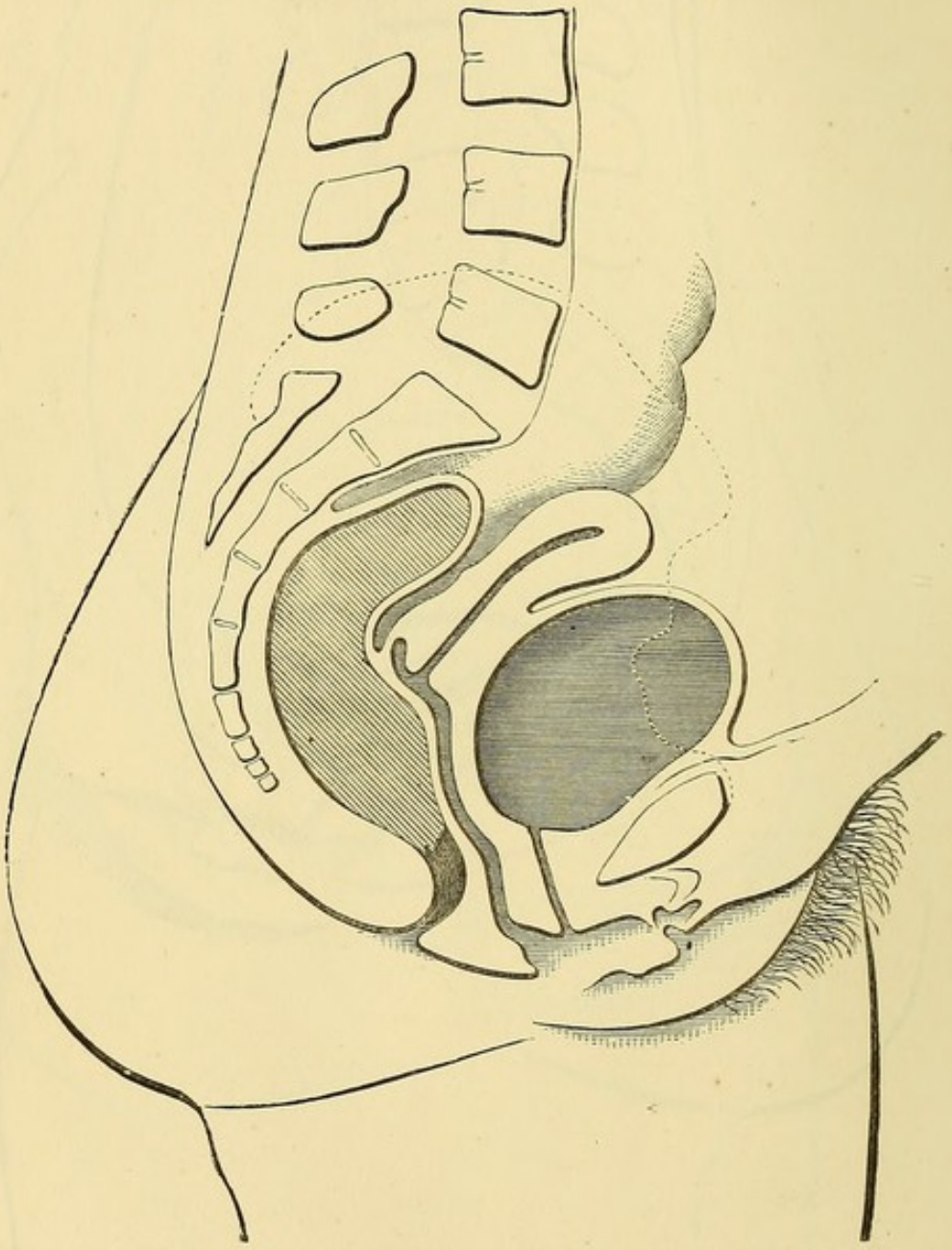


FIG. 7.—Erection and elevation of the uterus when rectum and bladder are both distended.

the bladder is moderately full, the position of the uterus shown in fig. 6 is the one most common during the act.

This displacement of the uterus by the distension of the rectum is, moreover, merely temporary, for that part of the bowel

below Douglas' folds is, under normal circumstances, almost or quite empty during the greater part of the day, and is only distended by fæces for a short time before and during the act of defæcation.

§ 8. If the bladder remain full after the rectum is emptied, the uterus remains in retroposition, and to some extent retroverted, fig. 8. It was shown in § 4 that the fundus uteri passes forward from this position when the bladder is emptied. The nature of this change, and the way in which it takes place, will now be more fully considered.

In anatomical and gynecological plates, the empty bladder is generally represented as an almost spherical body, contracted uniformly in every direction. Whether this happens frequently in the dead body I cannot say, but I do not remember having often found it so on post-mortem examination. I have, however, many hundred times convinced myself by the sound and bimanual vaginal and abdominal palpation, immediately after the bladder has been emptied, that the condition in the living woman is totally different. The walls of the empty bladder are considerably shortened, but they lie with broad surfaces in apposition, leaving free play room for the sound for 6, 8, or more centimetres, backwards as far as the portio vaginalis, forwards up to the symphysis, and laterally in various directions. In all my diagrams, as for instance in figs. 5 and 6, I have drawn the median section of the empty bladder in accordance with my examinations of it in the living woman. As the accuracy of this saucer-shaped representation of the empty bladder has been impugned by my professional brethren, I am glad that the spherical shape commonly attributed to this viscus when empty, has been called in question by Pansch, on the ground of his investigations on the dead body.

The space left free by the falling together of the bladder walls, is occupied partly by the uterus, partly by the intestines; when a woman's water is drawn off by a catheter while she is lying down, it is solely the pressure caused by inspiration that forces the intestines into the vacant space, but in the erect or squatting position their own weight and voluntary muscular contraction act upon them. As only that part of the bladder which is invested with peritoneum is subject to the direct

pressure of the intestines, it might well be supposed *à priori*, that this segment of the wall would be simply pressed down and lie upon the other segments which are firmly supported on the uterus, the vagina, and the anterior wall of the pelvis. There would then be no necessity for the uterus to leave the position it took up after the evacuation of the rectum, but it would remain, even when the bladder was empty, in the position shown in figs. 8 and 9. The abnormal way in which this sometimes does occur will be discussed hereafter: but under normal circumstances, as has been demonstrated in § 4 and fig. 4, when the bladder is emptied the uterus passes into anteversion with more or less anteflexion. Before endeavouring to explain this fact I must warn my readers that no inadequacy in the explanation will make the slightest change in the fact itself. This warning is necessary, because the circumstance, that while the anatomists describe the attachment of the cervix uteri to the posterior wall of the bladder as consisting of loose connective tissue, I have stated that this connection is close and permanent, has already been used as an excuse for questioning the normal anteversion and anteflexion of the uterus; (Pansch, in Reichert and Dubois, *Archiv.*, 1874). This anatomical objection was of course eagerly accepted by all who had not been able to recognize the normal anteversion of the uterus by examination of the living woman. However, I never attempted to demonstrate *à priori* that anteversion was a necessary result of the attachment of the uterus to the bladder, but anteversion of the uterus, the bladder being empty, having been independently proved to be a fact, I merely sought to explain it by this attachment. When the bladder is emptied the upper segment of its wall falls into contact with the lower, but the division between these segments does not in normal cases take place at the point *c* in fig. 8, where the peritoneal coat leaves the bladder and passes on to the uterus, but at *b*, between the uterine and vaginal sections of the posterior vesical wall: the uterine section forms part of the superior wall of the bladder, not of the inferior, a fact which can at any time be demonstrated by vaginal examination of a woman into whose empty bladder a sound has been introduced.

If the superior and inferior walls of the absolutely empty

bladder are in close contact, in the contracted and collapsed condition, the upper wall must exactly correspond in size with the under. It is manifest from a consideration of a median section of the bladder, that the anterior point at which the superior wall must fold itself, so to speak, over the lower, is exactly defined by the point *a*, at which the urachus leaves the bladder wall (figs. 8, 9); for below this point the wall of the bladder forms, as it were, part of the anterior abdominal wall, while the crown of the bladder with its peritoneal investment passing upwards and backwards from the urachus is quite untrammelled in its movements.

It seems doubtful if we can hope to find the corresponding point on the posterior side of the bladder by any measurements, for an essential factor, the contraction of each section of the wall, cannot be estimated. That the bladder, as it becomes empty, does fold itself over at the point *b* and not at the point *c*, seems to me to be proved by the fact that in the contracted state the circumference of the bladder wall is bisected by *ab* and not by *ac*. This fact determines the behaviour of the uterus during the time the bladder is being emptied, as it is exactly this critical part, *bc*, of the bladder wall that is attached to the cervix uteri, even though the attachment consists of loose connective tissue only. The diagram in fig. 9 may help to explain my meaning.

In fig. 9, as in fig. 8, the uterus is in the position which it occupies when the rectum is emptied, the bladder at the same time remaining full; but in fig. 9 the bladder is represented while in the act of being relieved of its contents, hence its upper wall is considerably contracted, and has under the action of abdominal pressure become convex downwards; *a* is the point where the urachus passing from the bladder, fixes it to the abdominal wall, *b* and *c* represent the same points in fig. 9 as in fig. 8.

Now in order that the bladder may be completely emptied, its wall, more particularly that of the upper segment, must go on contracting, and the abdominal pressure must force the upper segment into close contact with the lower and less movable segment. But if that part of the wall from *a* to *c* is further shortened or even forced further downwards by ab-

dominal pressure, either the uterus must pass into anteversion, or the bladder be incompletely emptied, or the connective tissue between uterus and bladder must give way. As anteversion of the uterus is what actually occurs, the connection between the uterus and the bladder must be strong enough to oblige the uterus to follow the bladder in its contraction.

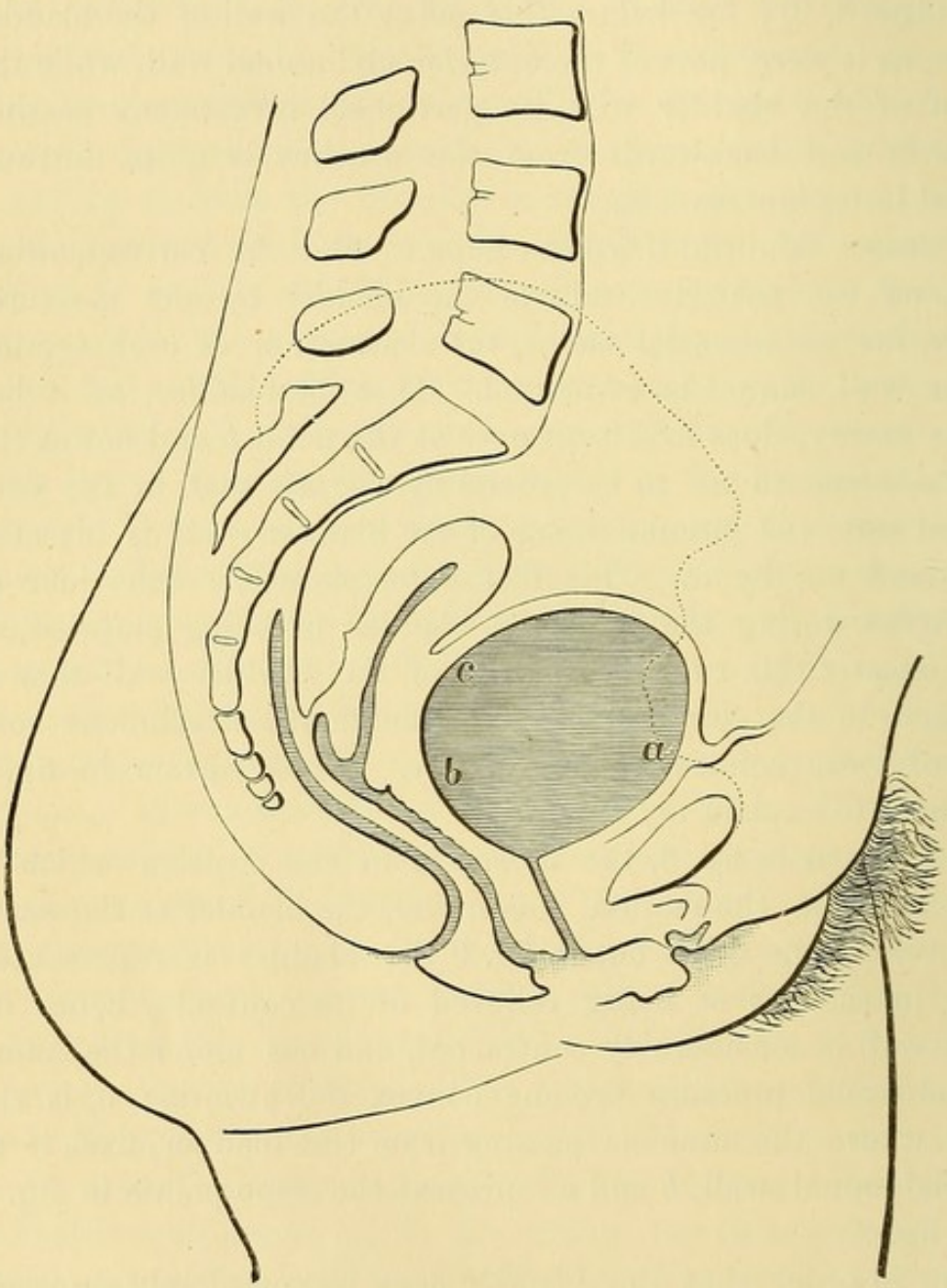


FIG. 8.—Distended bladder. *a*, point where urachus leaves bladder wall; *a*,*b*, points at which upper wall folds over when bladder is emptied.

The resistance to be overcome in this change of position of the uterus, which is simply a movement of the organ about its vaginal insertion, is not very considerable, and consists only in the

rigidity of the vagina, to which, if the bladder be emptied in the dorso-horizontal position, must be added the weight of the uterus itself. Moreover, the elasticity of the broad ligament, which at least tends to bring the uterus into the middle of

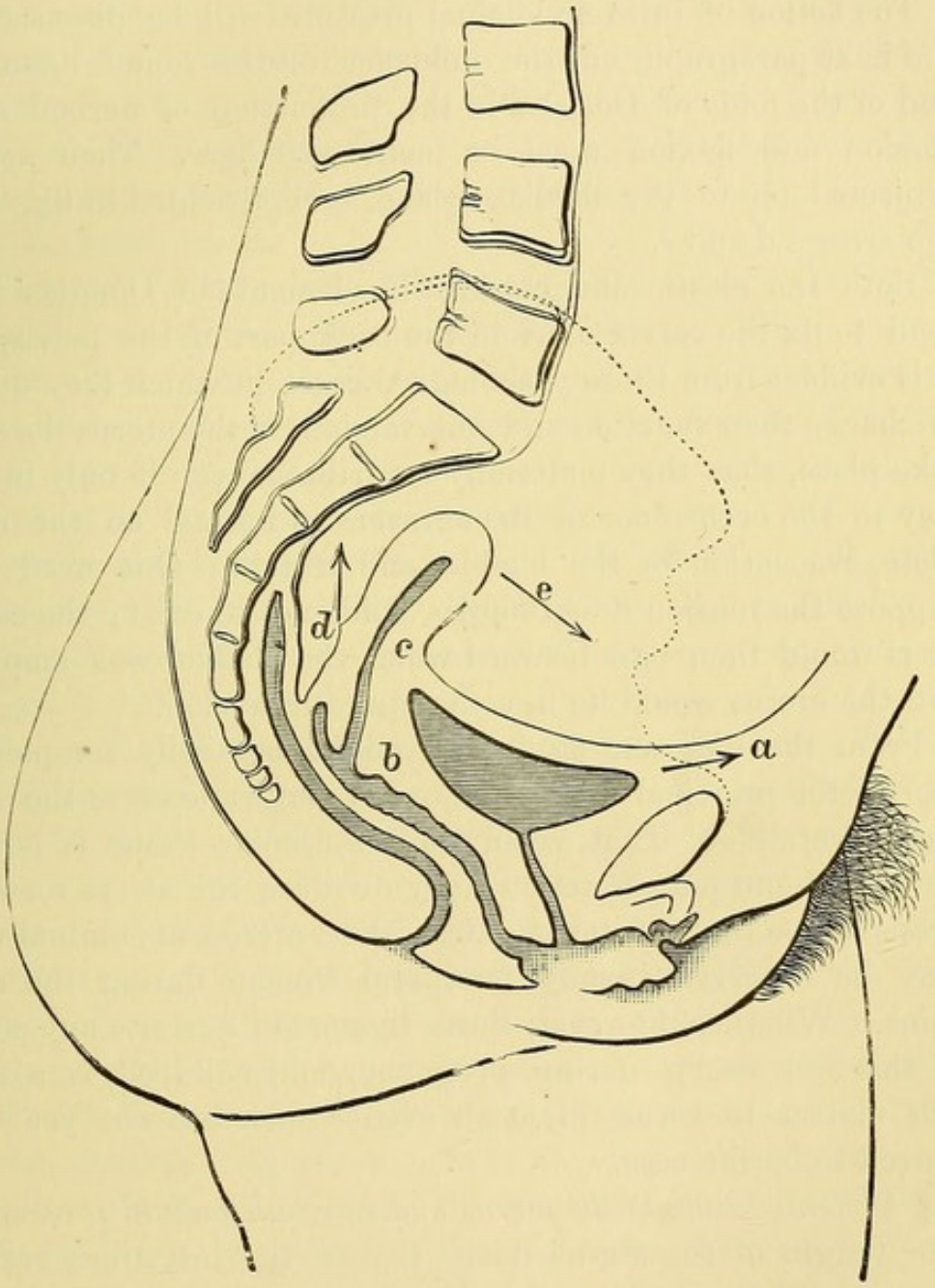


FIG. 9.—Uterus in the position it occupies when the rectum is emptied and the bladder is partially so; *ac* is convex downwards, but has not begun to contract; *bc* attachment of posterior bladder wall to the cervix.

the pelvis, will also assist in bringing the uterus, from the position represented in fig. 9, into anteversion. Anteversion and anteflexion are further promoted in the upright and squatting

postures by the weight of the uterus itself, by that of the intestines lying on its posterior surface, and by the intra-abdominal pressure; while if the urine is drawn off in the dorso-horizontal position, anteversion takes place in spite of the opposing weight of the uterus.

The action of intra-abdominal pressure will be discussed in the next paragraph, but the influence of the round ligaments and of the folds of Douglas in the production of normal anteversion and flexion must be mentioned here. Their action, projected on to the median plane, is represented in fig. 9, by the arrows *d* and *e*.

Both the elastic and contractile elements of Douglas' folds tend to fix the cervix uteri in the back part of the pelvis, and it is evident from those pathological cases in which they do not discharge their function and anteversion of the uterus does not take place, that they materially contribute, even if only in this way to the occurrence of the anteversion normal on the complete evacuation of the bladder and rectum. One need only suppose the tension *d* of Douglas' folds not to exist; the cervix uteri would then pass forward when the bladder was emptied, and the uterus would lie in complete retroversion.

From the diagram fig. 9, one might be easily tempted to ascribe the principal share in normal anteversion to the ligamenta rotunda. That, when their muscular tissue is largely developed and put in action, they do draw the uterus forward, pressing the fundus uteri against the anterior abdominal wall, may be observed in any puerperal woman during the after pains. Whether, however, these ligaments exercise any action of this sort, except during pregnancy and childbed, is a difficult matter to ascertain, at all events such has not yet been proved to be the case.

§ 9. *Gravitation of the uterus and intra-abdominal pressure.*— The weight of the uterus itself, that of the intestines resting upon it, and in a still greater degree the action of intra-abdominal pressure, and the variations in this action, are normal factors in the position of the organ, independent of the condition of the bladder and rectum.

The weight of the uterus is necessarily always in action both in maintaining the normal position and during the normal

movements of the uterus. It is, however, a factor of subordinate importance compared with others, some acting in the same direction others in directions more or less opposed to it, and exerting a much more powerful influence upon the organ. This has been already proved by showing that when the bladder of a woman in the dorso-horizontal position is emptied, the uterus passes into anteversion in spite of its own-weight, the traction of the wall of the bladder and the intra-abdominal pressure being stronger than the force of gravitation. In the erect posture, however, gravitation is itself a factor in producing the anteversion.

It would be very difficult to isolate and observe the effect of gravity on a uterus with normal attachments. When a woman is examined in the knee-elbow position, in which the action of intra-abdominal pressure is almost or quite destroyed or may even become negative, the uterus is found displaced in the direction of the force of its own weight, forwards and upwards (towards the abdomen and head). No doubt gravitation is a considerable factor in this displacement, but so also is the failure of intra-abdominal pressure. The woman should now be placed in such a position, that not only may intra-abdominal pressure be reduced to zero, but also that gravity may act in the opposite direction. But there would be some difficulty in this, for those positions of the body in which the pelvic inlet faces upwards are just the very ones in which, from the nature of the case, intra-abdominal pressure is greatest, and in which also the uterus is most burdened by the weight of the intestines: the influence, too, of this weight of the intestines on the position of the uterus, has as yet escaped separate investigation.

The influence of gravity upon the position of the uterus varies directly with the weight of the organ itself, the relaxation of its attachments and the increased room for play then afforded to it, the laxity of the abdominal parietes and consequent diminution of intra-abdominal pressure; the more extensive its superficies, the more will it be, *cæteris paribus*, affected by the weight of the intestines. Now as all these conditions are known to vary in accordance with certain physiological and pathological circumstances, we can, therefore, analyse the influence of these factors upon the position of the

uterus. A critical examination of the alterations in the position of the uterus caused by the change from the dorso-horizontal to the erect posture, was published by Küstner, in the *Archiv f. Gynækologie*, xv., 1879.

The influences which in the living body act upon the uterus in opposition to gravitation, for the most part disappear after death; intra-abdominal pressure ceases with the relaxation of the muscular tissue to the tension of which it was due. Some time afterwards a difference between the pressure in the abdominal cavity and that of the atmosphere often reappears; for the former may sink below the latter in consequence of rigidity of the abdominal muscles from rigor mortis, or the tension in the abdomen may be greatly increased by the development of foul gases.

But the normal intra-abdominal pressure during life, is far greater than either of these differences, and is estimated by Schatz to be equal in the upright posture to a column of water 30 cm. high. Its variations are the principal cause of the difference in the position of the uterus in the squatting and knee-elbow positions, and to it exclusively is due that movement of the uterus noticed when a woman is made to cough or strain while under examination.

Important changes in the position of the uterus are caused by these great variations in intra-abdominal pressure. A better idea of the mode of their permanent action on the organ may be obtained by watching the effect of the slight and regular variations in the pressure, due to the regular alternation of inspiration and expiration. The action of this respiratory change in the intra-abdominal pressure on the uterus naturally falls most on the corpus uteri which projects into the peritoneal cavity, and if the bladder be empty and the uterus lies in anteversion chiefly on its posterior, or in this position essentially superior surface, which looks towards the diaphragm. If the uterus be firmly secured in the pelvic fascia, but otherwise freely movable, the vaginal portion, *under the pressure of inspiration,* moves *in the opposite direction to the corpus uteri;* the corpus uteri is pressed downwards upon the empty bladder, and the vaginal portion moves towards the sacrum. Under favourable circumstances we may

see this movement of the vaginal portion in a cylindrical or grooved speculum. The woman should be in the dorso-horizontal position, the upper part of her body somewhat raised, and the respiration should be chiefly abdominal; and as the observation is easiest when the uterus is neither flexed nor flexible, and the vagina is large, a pluripara is to be preferred, with moderate so-called infarction of the uterus, but of course quite free from any residuary parametritic processes.

In the normally flexible virgin uterus, the vaginal part is but slightly altered in position by the movement of the corpus uteri during quiet respiration, though with the rest of the pelvic floor it is a little depressed during inspiration. We can in such a case, however, by the introduction of a sound bring the respiration movement of the corpus uteri itself under observation. The sound must be light and not elastic, and must be bent to correspond with the uterus to be examined; the bladder must be almost empty, and the posterior wall of the vagina must be pressed backwards far enough by the fingers which guide the sound, for the shaft of the latter to be left freely movable. From the sound the movement of the corpus uteri due to respiration can sometimes be so precisely obtained that one might readily draw out its curve.

Intra-abdominal pressure is an essential factor in the maintenance of the normal position of the uterus. Directly the fundus uteri passes forwards as the bladder is emptied, the uterus offers its previously posterior surface to the action of the intra-abdominal pressure. The anteversion of the uterus is thereby increased, and if the organ be normally flexible, anteflexion also occurs. This anteflexion is entirely due to the intra-abdominal pressure, the contraction of the bladder being only capable of causing anteversion. That flexion is the effect of intra-abdominal pressure is evident from the cases in which the contraction of the bladder does not cause anteversion. If after the emptying of the bladder the uterus remains (pathologically) in the position which is depicted in fig. 9, this slight degree of anteversion is not preserved for long. Pre-supposing that the flexibility of the uterus is normal, retroflexion occurs in a very short time, generally in less than twenty-four hours, and this can only depend on the fact that when the uterus is

retroverted, the intra-abdominal pressure falls on the anterior instead of on the posterior surface, as it does in normal cases.

§ 10. *The passive mobility of the uterus.*—All the movements of the uterus that have been at present discussed, depend on causes situated in the body of the woman herself. We can in fact, however, ourselves move the uterus so easily that an examiner may *unintentionally* and *unconsciously* alter its position, and attribute to it the position so modified, instead of the one it really occupied. To guard against such errors, it is of great practical importance, both for the recognition of normal position and diagnosis of deviations from the normal, to know what movements we may ourselves impart to the organ. I am not at all blaming my professional brethren in this, but the warning is quite justified, for even up to the present time, it is constantly taught both orally and in books, that the position of the uterus in the pelvis is almost constant. The caution necessary in palpating can only be attained by practice, and is by no means generally understood, and still less commonly practiced; for the resistance to be overcome in reaching the uterus requires the use of a certain amount of force, and this force when employed for long, necessarily displaces the organ.

The movements we may impart to the uterus, either by the fingers while examining, or by the use of instruments, are very various. In digital examination *per vaginam*, the vaginal portion may be pushed several centimetres backwards and upwards in the direction of the vaginal axis. We may in this way straighten the uterus if it be flexible, but if it is not we only increase the anteversion, a proceeding which can be carried still further by exercising pressure on the corpus uteri through the abdominal walls. The body of the uterus may likewise be moved in the opposite direction from outside, it may be pushed backwards, straighten, and even somewhat retroverted, and we may considerably assist in this movement by drawing the vaginal portion forwards by the bent finger in the vagina. One hand in the vagina can lift the uterus against the other hand palpating the abdomen, and *vice versa*, the hand outside may press it down, and it may be displaced still further downwards by traction with hooks or forceps.

The passive mobility of the uterus is greatest in the directions mentioned, viz., depression and elevation, anteversion and retroversion. It must, however, be mentioned that we may from the vagina, or still more easily from the rectum, force the entire organ forwards into ante-position, and from the vagina and the abdominal surface force it a little backwards into retro-position. Dextro-position and sinistro-position are less easily imparted to the normal uterus, but there is not so much difficulty in causing dextro-version and sinistro-version, by pressing the vaginal portion to the left, and with the hand on the abdomen the fundus to the right, or *vice versa*. It need hardly be mentioned that all these movements may also be given to the uterus by a sound introduced into its cavity.

Finally the uterus may be rotated about its own axis, either by twisting the handle of a sound curved anteriorly, and thus rotating the knob of the instrument and with it the fundus uteri to the right or left, or by a cylindrical speculum which puts the vaginal vault on the stretch. In order to estimate the degree and direction of the torsion caused by the speculum, a mark must have been made on the ocular end of the instrument. On account of the great importance for purposes of diagnosis of the torsion and capability of torsion of the vaginal portion, I mark on all my obliquely truncated Ferguson's specula, the point corresponding to the greatest length of the cylinder with a knob of sealing wax. The speculum is introduced with the longest part of its wall directly backwards, and in normal cases the os uteri is shown either directly transverse in it, as in fig. 10 *a*, or more often slightly turned to the right, for the uterus normally lies in slight dextro-torsion, its anterior surface and fundus looking somewhat to the right. If the speculum be turned in the directions of the arrows *b* and *c*, the vaginal portion will move to a certain extent with the instrument: fig. 10 *b* shows dextro-torsion, *c* sinistro-torsion; in each case the speculum has been rotated through an angle of 45°, and the vaginal portion has followed its rotation to about 20°. This is about the extent of rotation in the speculum that is normal, in abnormal cases it may be increased to 40°, or not infrequently much more. This torsion of the vaginal portion no more necessarily extends to the corpus uteri than that imparted

to the corpus uteri by the sound involves the vaginal portion. The latter fact is easily verified by using a speculum, or by feeling the vaginal portion with the finger while the rotation is made with the sound; the proof of the former is not so easy

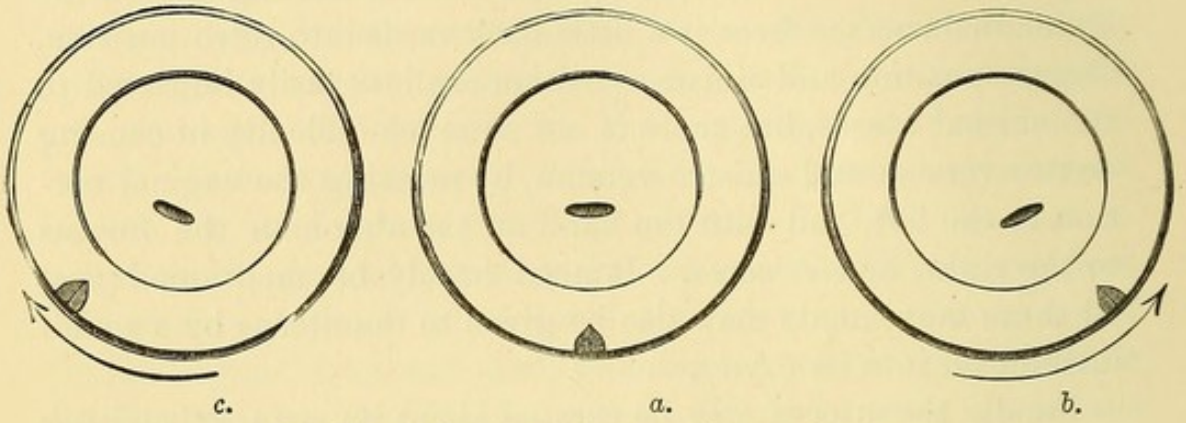


FIG. 10.—*b*. Dextro-torsion. *c*. Sinistro-torsion.

in the normal uterus, but is furnished by certain pathological cases. Thus capability of torsion may exist in the vaginal portion in cases of immovable fixation of the retroflected fundus, but it is always proportionately diminished when the cervix uteri is fixed by parametritis, and is completely destroyed when this fixation is absolute. It follows therefore that the principal seat of the normal capability of the uterus for torsion is at the junction of the corpus and cervix, where the greatly underrated flexibility of the uterus is also situated.

§ 11. From the foregoing paragraphs, in which I have examined the normal position of the uterus, it is evident that no definition of this position would be accurate which did not attribute to the organ a considerable degree of mobility, and include in it the recognition of certain notable displacements daily occurring under normal circumstances.

§ 12. The position of the ovaries depends to a certain extent on that of the uterus, though it is not, as a rule, greatly affected by the normal displacements of the uterus, pregnancy excepted. Some of the deviations of the uterus may, however, be shown to have a considerable influence of pathological importance over their position.

The ovaries, like the uterus itself, occupy a position in the living woman very different from that in which they are generally found in the dead body, and which has been, on anatomical

grounds, ascribed to them; but they are within reach of palpation in the living body, and their position can therefore be determined by direct examination.

The ovaries lie close to the uterus on either side within the true pelvis, their long axes not transversal, as was thought (Henle), but parallel to the lateral wall of the pelvis, and nearly so to the median plane. Nor do they, as has also been stated (Luschka), hang down from the uterus, but extend upwards from it (His), their lateral attachments to the brim of the pelvis being higher than their connections to the uterus. They lie, with their superior extremities in the plane of the pelvic inlet, close under the inner edge of the ilio-psoas muscle, which, when in momentary contraction, is the best guide for the external hand in bimanual palpation of them. In the vagina the right hand should be used for examining the right ovary, and *vice versa*, and the vaginal vault close to the cervix must be pressed upwards by one, or preferably by two fingers, in a direction opposite to the pressure of the outer hand. In this way we can feel the uterine end or inner insertion of the ovary, and under favourable circumstances, that is if the abdominal wall be properly relaxed and not too fat, may convince ourselves that we can distinctly trace between our opposing fingers the ligamentum ovarii from the end of the ovary to the lateral edge of the uterus.

The ovary, if normally movable, at once slips away from the fingers in the vagina in the direction of the pelvic inlet, unless it is supported by the external hand; it can, however, be pressed down by this hand far enough for the fingers in the vagina to palpate the lower half of its surface. One can then let the ovary slip backwards and forwards between the finger in the vagina and the lateral wall of the pelvis, and in this way ascertain its mobility parallel to the median plane, which is considerable, and the condition (often uneven) of the surface that faces the uterus.

Fig. 11 shows the position of the ovaries as seen in a direction perpendicular to the conjugate of the pelvic entrance. Each ovary is normally almost or quite concealed by the Fallopian tube and ala vespertilionis of its own side, as the left ovary is in the figure, the tube on the right side being cut

away to expose the ovary; the bladder is moderately full, but the lower part of the rectum is empty, and the distended sigmoid flexure of the colon is drawn aside to open the view into Douglas' pouch. Fig. 12 which shows the rectum uterus and bladder in profile in the same position, will help to explain fig. 11; the large intestine is removed, as it would conceal the left ovary; the arrow in fig. 12 shows the direction in which fig. 11 is seen.

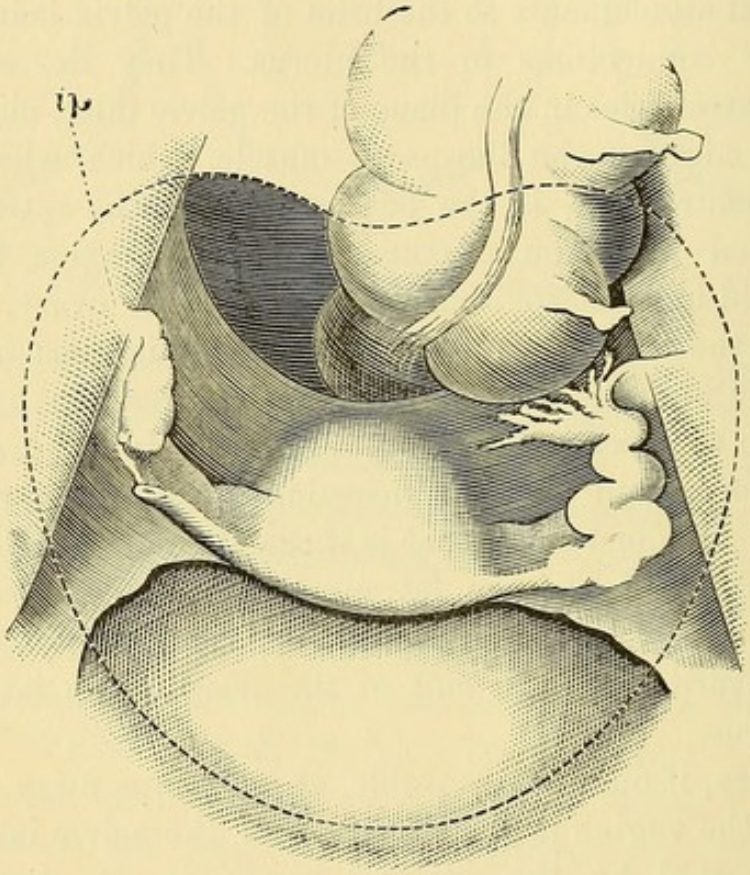


FIG. 11.—View of the pelvic viscera seen perpendicular to the plane of the inlet, the tube has been cut away on the right side to expose the ovary.

Just in front of the place where the ureter crosses the iliopsoas muscle (unfortunately not marked in fig. 11), the vasa spermatica pass downwards over the belly of the muscle. The ligamentum infundibulo-pelvicum (*ip* in fig. 11) formed by the fold of peritoneum containing these vessels is also the suspensory ligament of the ovary.

On the length of this ligament, and the place of its insertion in the lateral rim of the pelvis I have not met with any exact statements. I have found it very short in virgins, longer in women who have had children; the place of its insertion, pro-

jected on the conjugate, corresponding with the division between the middle and posterior third of this line, the right insertion being 5—8 mm. further back than the left in accordance with the normal dextro-torsion of the uterus. The insertion of

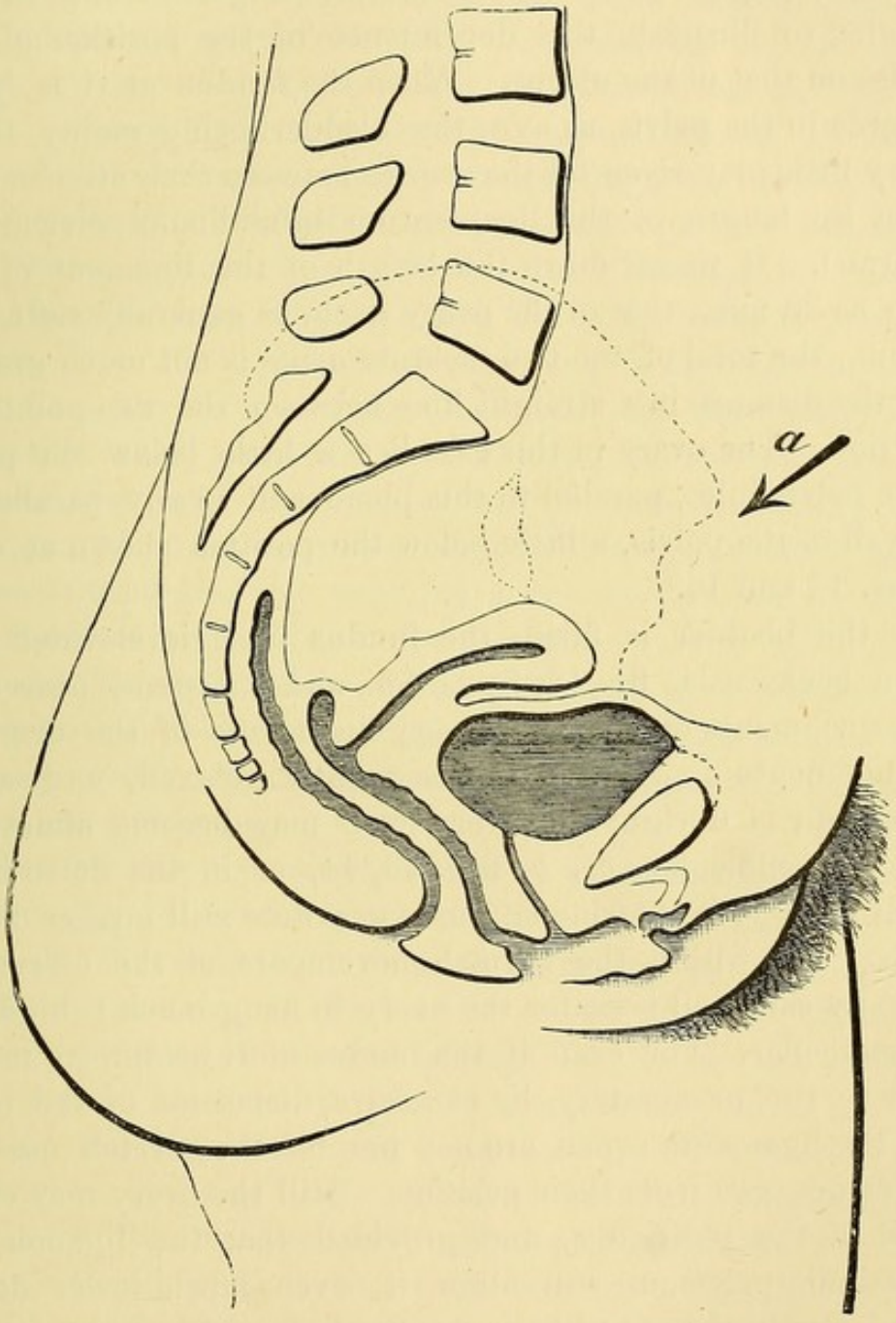


FIG. 12.—The rectum, uterus, and bladder in profile. The large intestine cut away to show the left ovary. The arrow shows the point of view in fig. 11.

the ligamentum infundibulo-pelvicum on the edge of the psoas forms the punctum fixum in the displacements of the ovary.

The influence of gravitation on the position of the ovaries is

very limited; their position is much more decided by that of the uterus, since the position in the pelvis of the other attachment of the ovaries, the insertion of the ligamentum ovarii into the body of the uterus, is considerably altered in the normal and abnormal displacements of the uterus. Figs. 13 and 14 are intended to illustrate this dependence of the position of the ovaries on that of the uterus. When the fundus uteri is lying forwards in the pelvis, as at *a*, the bladder being empty, there is very little play-room for the ovaries between their attachments unless the length of the ligamentum infundibulo-pelvicum be abnormal. If we set down the length of the ligament of the ovary as 28 mm., that of the ovary itself, as generally stated, as 40 mm., the total of the two measurements is not much greater than the distance in a straight line between the two points of insertion. The ovary in this case lies a little below the plane of the pelvic inlet, parallel to this plane and nearly parallel to the wall of the pelvis, a little below the position shown at *ov.a*, in figs. 13 and 14.

As the bladder is filled, the fundus uteri is elevated and forced backwards, fig. 12, fig. 13 *b*., and so comes nearer to the attachments of the suspensory ligaments of the ovaries; the ligamentum ovarii is consequently relaxed, and when the woman is upright the ovary itself may become almost or quite perpendicular, *ov. b*, figs. 13, 14, or in the dorso-horizontal position its uterine end may gravitate still further backwards. But within the normal movements of the uterus no necessity can well arise for the ovary to hang much behind the perpendicular. For even if the fundus uteri be forced nearly as far as the promontory, by excessive distension of the bladder, the ligamenta ovarii are not put on the stretch nor the ovaries dragged from their position. Still the ovary may come to lie in the position *c*, and provided that the ligamentum infundibulo-pelvicum will allow it, even much lower down, should the fundus uteri be anomalously forced into the hollow of the sacrum, *ov.c* in fig. 13 and 14. In cases of retroflexion it is not unusual to find the ovaries still lower in the pelvis than this; and it is probable that the ligamentum infundibulo-pelvicum can be considerably extended in length when retroflexion occurs soon after childbed.

§ 13. Some explanation is necessary about the woodcuts in this book. Nearly all the illustrations, those of normal as well as those of pathological conditions, have been specially intended as practical guides for the examiner's finger, in digital palpation. Hence most of them are founded on the results of palpations and measurements of the living body, and are not to be taken as pourtraying the appearances of individual preparations; gynecologists should of course take every opportunity of examining the conditions in the dead body and in pathological specimens, and of inspecting good drawings of such conditions. But anatomical information is not instruction in diagnosis, and if for the latter it is necessary to have the assistance of drawings, it is better to make them from the living woman than from the dead body, most especially when, as is the case with the uterus and the soft parts of the pelvic floor, the conditions to be illustrated have been proved to be materially different before and after death. An anatomical drawing, executed in the most masterly manner and representing, with undoubted truth to nature, the appearance of the female pelvis and its soft parts in a well selected and beautiful preparation, might lead anyone into serious error who accepted it as authoritative on the relations of these parts in the living woman.

Of course it is not an easy matter to make an accurate sketch of anything felt by the finger merely from the results of palpation. In the elaboration of such a drawing we must realize, as far as possible, all the various views acquired from observing as many other cases as possible. To do this without the exercise of some power of combination, or if the expression be preferred, some imagination, is impossible, and when the results of such palpation are put on paper, the drawing will be more properly called a diagram than a picture of the internal parts of the living woman. This latter it is beyond our power to obtain in any way.

As diagrammatic sketches may always be suspected to depend a good deal on subjective impression, and to be more fanciful than they should be, I will give in detail the manner in which I have tried to make my illustrative pictures as objective as possible.

I laid down the pelvis from the dimensions which are given as normal in the obstetric text-books, as the average of a large number of measurements. A section of the pubic symphysis, measuring 4 cm. in its longer diameter, was first of all drawn on the paper. From the upper extremity of this diameter, the conjugata vera was laid off to the length of 11 cm. at an angle of 100°, and from the same point at an angle of 30° below it H. Meyer's normal conjugate diameter, upon which a point was marked at a distance of 13 cm. from the centre of the posterior wall of the symphysis. This point,

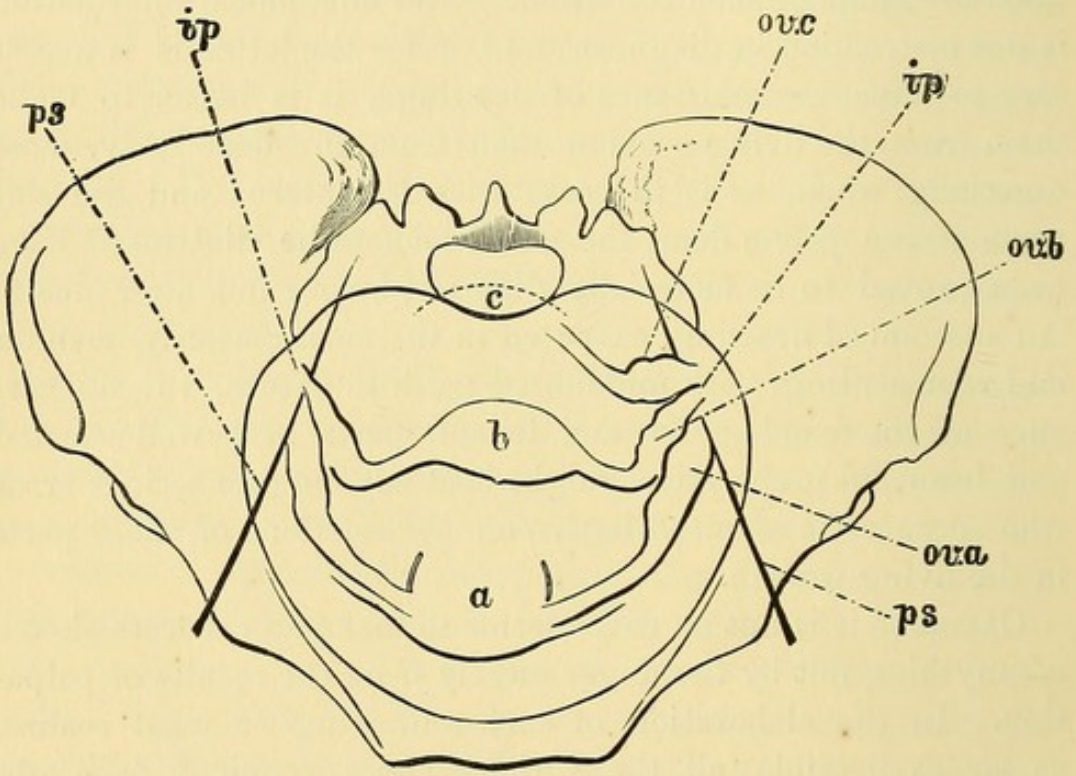


FIG. 13.—Diagram of the pelvis showing the position of the ovaries as varied by that of the uterus.

in a pelvis, the conjugate of the cavity (Beckenmitte) of which measures 13 cm., is the centre of the anterior surface of the third sacral vertebra, the point of origin of the normal conjugate. In this way the upper half of the interior surface of the sacrum is found in its normal relation to the symphysis. The sketching in of the sacrum and coccyx is then completed from median sections of normal female pelves, the end of the sacrum lying 115 mm. and that of the coccyx 95 mm., from the posterior surface of the symphysis pubis. It may be remarked, that if the length of each vertebra be set down cor-

rectly to the scale already decided for the upper two and a half vertebræ, by the conjugata vera being 11 cm., and the normal conjugate 13 cm. in length, diverging from it at an angle of 30°, the posterior height of the pelvis will only be

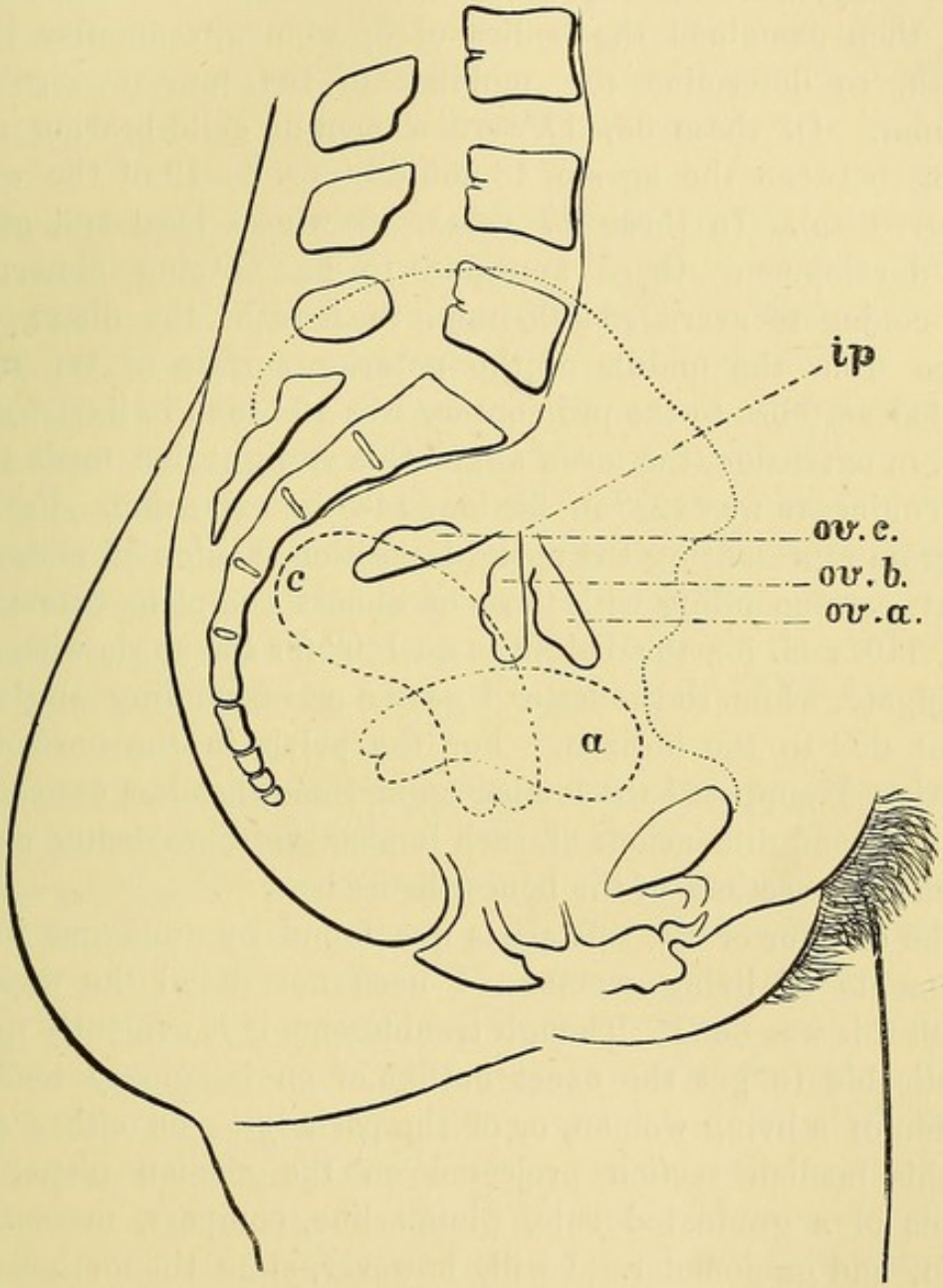


FIG. 14.—Profile diagram of the pelvis shewing ovary as in fig. 13.

12 cm. instead of 13 cm., the measurement usually given as normal. If the normal conjugate be represented, as it often is in reality, less than 13 cm., and the angle between it and the conjugata vera as less than 30°, which is also frequently the case, every vertebra of the sacrum will of course have to be

made still smaller; I think, therefore, that 13 cm. is decidedly greater than the average height of the back of the pelvis.

The height and direction of the three lower lumbar vertebræ I took from the average of measurements I had made in the dead body, some time ago for a different purpose.*

I then examined the bodies of 33 women, soon after their death, to determine the mobility of the lumbar vertebral column. Of these 33, 17 were women of child-bearing age, being between the ages of 18 and 43 (nos. 3—19 of the work referred to). In these 17 cases, in whose local and general development there appeared to be nothing abnormal, the conjugate averaged 108 mm. in length, the direct distance from the middle of the anterior surface of the third lumbar vertebra to the promontory was 104 mm. in flexion, 112 mm. in extension, the mean angle this straight line made with the conjugate was 122° in flexion, 143° in extension. For my diagram representing the upright position, I adopted measurements corresponding with those of almost complete extension, viz., 110 mm. for the height, and 140° for the angle with the conjugate, while to the latter I gave a corresponding angle of about 60° to the horizon. For the pelvis in the horizontal position I supposed the lumbar spine somewhat less extended; the form and dimensions of each lumbar vertebra being again taken from sections of the bones themselves.

The contour of the soft parts was found by numerous measurements of living women. I need not detail the way in which this was done. Though troublesome it is evidently quite practicable to get the exact outline of an imaginary median section of a living woman, or of the parts lying on either side of this median section projected on the median plane, by means of a graduated rule, plumb line, compass, measuring chain, and goniometer. I will, however, state the method by which the contour of the integument of the pelvic floor was arrived at, because the correctness of this part of the outline, which differs materially from that of the same parts in median sections of frozen dead bodies, has been contested. In the first place the point corresponding to the extremity of the

* "On facilitating labour by diminution of the resistance offered by the pelvis." *Jenaische Zeitschrift*, Bd. 3, 1867, § 272.

coccyx was marked on the skin, and to do this, it was necessary to feel the point of the bone at one and the same time from the rectum and through the skin, and taking care to avoid disturbing the latter, to make a mark on it just in front of the nail of the outer finger.

The distance from this point to the preputium clitoridis was then measured without pressing in or disturbing the integuments in any way, first with the compasses and then with the chain.

These measurements were made on thirty young persons all well nourished, and with uninjured frenula; of these thirty fifteen were far advanced in pregnancy. In the latter the direct distance between the two points averaged 142 mm., that measured over the skin 154 mm.; in those who were not pregnant these distances were 131 and 144 mm. respectively. Each of the measurements differed in the two cases about one cm., while the difference between the two measurements, amounting to twelve mm. in those pregnant and thirteen mm. in the others, was only one mm., and it is with the latter difference which we have to do in constructing the outline of the pelvic floor.

In addition to the difference between the measurements in pregnant women and those not so, there were also in each group many individual variations in the distance between the two points mentioned, but the proportion of the skin measurement to the direct distance was remarkably constant. We may, therefore, from these two groups of fifteen measurements and the averages deduced from them, consider the value of the line in question as pretty well settled in the case of young healthy and well nourished persons, for on the proportion between the skin measurement and the direct distance our sketch principally depends. The contour of the pelvic floor is divided into three parts by the anus and the frenulum labiorum, the proportions of which, for our drawing, it is of course also necessary to know. Of the 144 mm., 59 lay on the average, between the coccyx and the anus, 38 from the latter to the frenulum, and the balance of 47 were taken up by the vulva.

The normal pelvis, worked out as previously described, and the contour of the skin were then united in one draw-

ing, in which the preputium clitoridis was exactly 131 mm. distant, in a direct line, from the point on the skin corresponding with the extremity of the coccyx. The point of the prepuce is represented as lying two cm. in front of the lower third of the anterior surface of the symphysis, and one cm. of adipose and connective tissue is supposed to lie over the coccyx. The line of the skin was then so prolonged forwards, that the anus lay at the 59th mm., the frenulum labiorum at the 97th mm., and that from this point to the preputium clitoridis the distance remained exactly 47 mm., giving the total of 144 mm., the average result of the chain measurement in the fifteen persons who were not pregnant. Within the limits thus given, the construction of the contour was, of course, also the result of the inspection and palpation of the living woman, and of the consideration of median sections of the dead body.

The sketch thus obtained, reduced to one-third, is the foundation of the woodcuts in this work. For filling in the internal parts in the positions found by palpation the palpable prominences on the posterior, anterior, and lateral pelvic walls, were used as guides, and the lateral wall, projected for this purpose into the median plane, is marked out by the dotted line in the diagram. When hands are shown in the figures they are of course my own hands on the same scale.

Having thus by utilising as many measurements as possible, freed the results of palpation from the disturbances of subjective views, we ultimately obtain drawings which, quite apart from their superiority in being derived from the living woman, will be very little inferior in objective truth to those made from preparations. Although in the latter every peculiarity of the individual specimen, even those foreign to the general character of the parts which should be represented, may undoubtedly be drawn with perfect accuracy, it is on the other hand, in my opinion, no small advantage that every line of the diagrams elaborated from the averages of numerous measurements is open to criticism, and is capable of correction on the basis of renewed or extended investigation.

§ 14. A critical examination of the various opinions held by others as to the normal position of the uterus, and of the various

drawings that have been made of its position, would be too long to undertake here. Antiquated and erroneous ideas are more quickly corrected when left unnoticed than when dragged into the glare of acute criticism. Thus Carl Schroeder has tacitly allowed the illustrations* he defended so warmly against

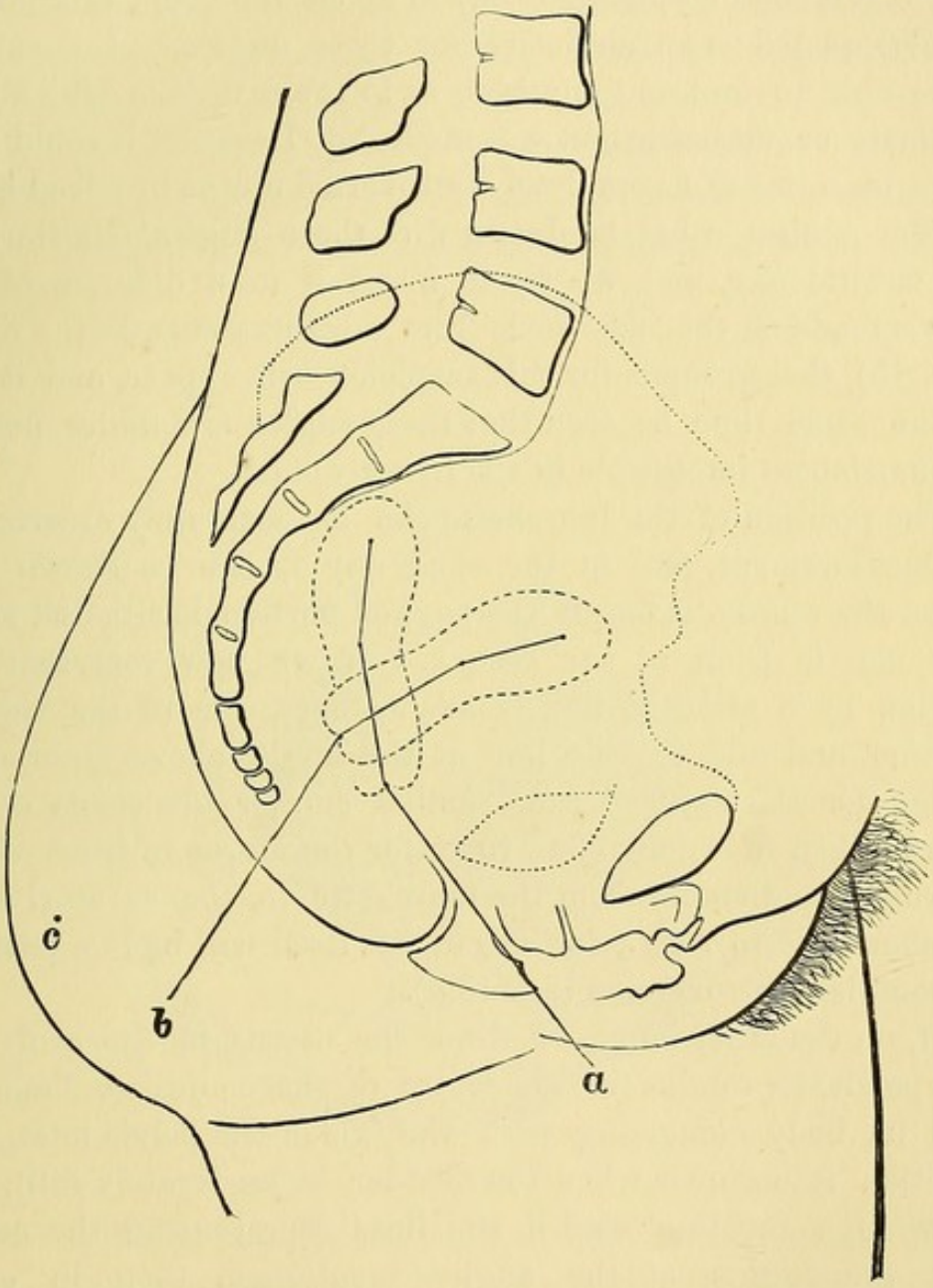


FIG. 15.

my objections, to disappear from the later editions of his manual on the diseases of the female generative organs, and has replaced them by better ones.

I must allude, however, to one misrepresentation about the

* *Archiv. f. Gynäkolog.* ix., § 68 and Taf. iii.

angles which the cervix and corpus uteri and the vagina make with each other, because it is given an appearance of truth by the statement of exact figures.

Both Klob* and E. Martin† state that the vagina and cervix uteri make an angle open forwards of about 155°, and the cervix and corpus uteri one of about 165°, and Rokitansky is also quoted as an authority for these angles. I have not been able to find out anything as to the case from which this estimate or measurement was made, but I suspect it could only have been one of a completely retroverted uterus in a dead body. If the genital canal be drawn with these angles, one-third of its natural size, and we try to insert it in a diagram of the pelvis made on the same scale from measurements on the living (fig. 15), the grounds for this suspicion will appear, and it will at the same time be seen that these angles are under normal circumstances impossible in the living woman.

The position of the fourchette can be accurately ascertained by measurement, and in the same way it can be shown that when the rectum is empty the vaginal portion is situated about two cm. in front of the coccyx. If we now represent the vagina by a straight line from the fourchette to the vaginal portion, and add to this line at the angles above mentioned, 4 cm. for the cervical canal and 3 cm. for the cavity of the uterus, then in order to find room for the uterus in front of the sacrum, the distance from the fourchette to the os uteri must be shortened to 7 cm., and the uterus itself will be in a position of complete retroversion (fig. 15 *a*).

If, on the other hand, we draw the uterus in the centre of the pelvis, its fundus in the centre of the conjugate diameter, and its body coinciding with the axis of the pelvic inlet, (the position it occupies when the bladder is moderately full), and draw in connection with it the lines representing the cervix and the vagina at the angles mentioned, then in order that the distance from the os uteri to the fourchette should be 9 cm., which is proved by figs. 5 and 6 to be the average distance between these points, the latter would have to lie far behind the anus, or more than 10 cm. from its

* *a. a.* O., p. 54.

† *Neigungen und Beugungen*, p. 13.

real position (fig. 15 *b*). If these angles remain the same when the fundus uteri is drawn in the position it is found by examination to occupy when the bladder is empty (figs. 1, 4, 5 and 6), the vaginal orifice will lie still further backwards (at *c*, fig. 15). It would not have appeared necessary to disprove this statement as to the normal angles of the genital canal, if it had not had the support of such renowned anatomical and gynecological authorities, and if the inaccuracy of many recent representations of the position of the uterus had not appeared to show that the authors of these representations were still unable to free themselves from this conception of the angles in question.

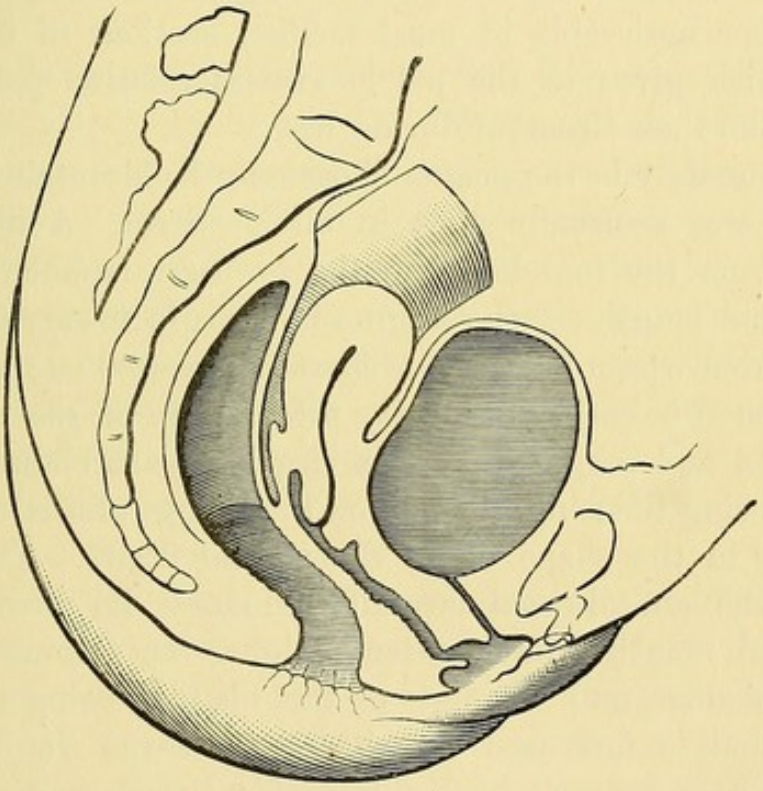


FIG. 16.

§ 15. Finally, mention cannot be omitted of one picture of the female generative organs *in situ*, so excellent that it has become quite historical, I mean Kohlrausch's sketch of a median section of a virgin pelvis. It shows the uterus in retroversion, and the genital canal in extreme extension: drawing straight lines through the vagina and the cavities of the cervix and uterus, the vagina appears to make an angle of 147° with the cervix, and the latter one of 140° with the corpus uteri. But this exten-

sion in the genital canal is accounted for in the drawing by the state of the bladder which is very full, and the rectum which is also represented in a distended condition. Gynecological examinations are generally made when the rectum and bladder are both empty, because more information can then be acquired, and especially because a full bladder interferes with the simultaneous palpation of the uterus from outside.

Kohlrausch's sketch therefore gives no conclusive information as to the position of the uterus under the conditions which we prefer for making an examination, but is quite compatible with a correct conception of this position if we suppose the distension of the bladder and rectum removed. Moreover it does not give that erroneous pushing out and swelling of the soft parts of the pelvic floor noticeable in most median sections of the frozen body, which gives to the pelvic viscera relative positions so very unlike their situation during life.

Unfortunately in the person chosen by Kohlrausch the genital canal was unusually short in all its parts. A distance of 5·5 cm. from the fourchette to the os uteri, is much less than the normal length of the vagina in a virgin twenty-one years of age, from whose body the preparation was taken; and 5 cm. is at least 1·5 cm. less than the total length of the cavities of the cervix and corpus uteri in a virgin, as ascertained by the sound during life; nor do we find the living uterus curved so decidedly in the shape of an S, as in the figure. This shortness of the genital canal naturally influences its position: one of normal length would extend higher up behind the distended bladder, and the state of the bladder being the same, retroversion is increased by shortness of the vagina. The absence of the buttock in Kohlrausch's sketch, a dissimilarity with the living woman which has found its way into many gynecological plates, adds greatly to the difficulties of the student, and is explained by the fact that the thigh was disarticulated before the preparation was made.

As long as there was no drawing of the pelvic viscera as they are actually situated in life, the accuracy of which was guaranteed by its having been made according to exact measurements in the living body, we had to depend for instruction on correct sketches of preparations from the dead

body. As in spite of the deficiency above mentioned, Kohlrausch's sketch was the one best adapted for the demonstration of the relations of the parts even in the living woman, it was properly the one which even till quite lately was most frequently reproduced by anatomists and gynecologists.

§ 16. The consideration of the normal position of the uterus has already taken up so much space, that although a history of the different theories that have been held would not be without interest, I can only refer the reader to the chronological list of literature on the subject. But as I have had the honour for the last ten years of being almost the only defender of the true theory of the normal position, I will make some remarks as to whom this priority, to which I myself have no claim, belongs.

Chiari, Braun and Späth, say, in their *Klinik der Geburtshülfe und Gynäkologie,* 1855, p. 375, "The position of the virgin uterus is such that the body is joined to the cervix at an obtuse angle, opening downwards and forwards, so that on an internal examination one can feel a large part of the anterior surface of the uterus through the anterior vaginal *cul de sac.*" As I commenced the systematic study of gynecology in the autumn of 1854, this view was of the greatest value to me personally, it dominated over my first examinations, and recognising its accuracy I was in a great measure prevented from acquiring false ideas on the position of the uterus.

Bennet, in his paper on "Anteflexion of the Uterus considered as a Normal Anatomical Condition," in the *Dublin Quarterly Journal,* 1857, p. 314, showed how the normal anteflexion of the uterus could be proved by the introduction of a flexible sound, and deduced therefrom some important practical hints. Amongst other things he says, "Thus, in the absence of all uterine mischief, anteflexion of the uterus, existing naturally and congenitally, may be accidentally recognized, and may be treated, most irrationally, as a morbid state."

Boulard's thesis, *Quelques notes sur l'utérus,* Paris, 1853, and Cusco's thesis, Paris, 1853, *Sur l'ante-flexion et la retro-flexion de l'utérus,* both of which indicate anteflexion as normal in the uterus during fœtal life and childhood, I have not been able to see in the original, and only quote from Aran. Aran is

also my authority for the statement that Follin and Verneuil had pointed out that the entire uterus did not lie in the axis of the pelvic inlet as had been previously thought, but that the cervix alone has that position, the body of the uterus being normally almost horizontal. While Aran concurs with these statements, he differs from Cusco in thinking that the anteflexion does not disappear at puberty, but continues normal for a long time afterwards, only disappearing in advanced old age and after repeated pregnancies. Aran concludes his essay (*Archives générales de Médecine,* 1858) with the statement that it is wrong in principle to treat any but the most exceptional cases of anteflexion at all, and that no such cases should be treated mechanically.

Panas (*Archives générales de Médecine,* 1869) was also led from examinations of living women to consider that anteflexion was the normal position of the uterus. He summarised the results of Gosselin's (1854) and Goupil's (1860) examinations with his own. The former found 27 anteflexions in 48 women, Goupil 65 in 115, and he himself 40 in 114 cases. None of the other positions in which the uterus was found occurred at all so frequently. The examinations were made at the Lourcine Hospital at Paris, on young women under treatment for venereal disease.

In the mean time Winckel (*Pathologie und Therapie des Wochenbett,* Berlin, 1860, p. 290), and Schroeder (*Schwangerschaft, Geburt und Wochenbett,* Bonn, 1867, p. 187), had published their observations on the normal anteversion of the puerperal uterus. Credé also in a valuable treatise on the same subject, announced his opinion, based on his own observations and those of Panas, that quite apart from pregnancy, a position of the uterus perpendicular to the plane of the pelvic inlet, and also the deviation of the fundus anteriorly are physiological, and he declares himself decidedly opposed to the mechanical intra-uterine treatment of these conditions. (*Beiträge zur Bestimmung der normalen Lage der Gebärmutter, Archiv für Gynäkologie,* I, 1870, p. 120).

The validity of Panas' observations as proving the normal anteflexion of the uterus has been questioned by E. Martin, on the ground that they were made on women suffering from disease of the genital organs, in many of whom the position of

the organ was decidedly anomalous. The following is a summary of the observations of Gosselin, Goupil and Panas:— Uterus normal 81, anteflexion 132, anteversion 26, retroflexion 11, retroversion 5, lateroversion 19, doubtful 3. Total 277.

The 26 anteversions (without flexion) and 19 lateroversions (torsions) prove that the results of metritis and parametritis were not excluded, and therefore among the 132 anteflexions a large number might have been pathological. As Panas mentions that his examinations were made when the rectum was empty, but does not state the condition of the bladder, one might answer to this objection that among the 81 uteri set down as normal, *i.e.*, as lying in the axis of the pelvic inlet, a great number would have passed into normal anteflexion when the bladder was emptied. But there is no use at present in trying to question these observations. For the proof of the fact that the uterus is normally in anteflexion, does not now depend on them, but can, as I have shown in this chapter, be demonstrated at any time on any normal case. My object here is merely to acknowledge frankly the merits of those authors who, during the past decade, and even during the preceding one, attained by their observation to the knowledge of a truth, for the general acceptation of which we are still fighting.

SUMMARY.

The normal position of the uterus is determined by its connexion with the tissues adjacent to it; by its fixation in the vagina and in the pelvic fascia, and by its attachments to the bladder and to the peritoneum.

The bundles of muscular fibre in the round ligaments, and in the folds of Douglas, give a peculiar character to the peritoneal attachment of the uterus. The action of the round ligaments is to prevent the fundus uteri from retiring permanently away from the anterior pelvic wall; that of the ligaments of Douglas to prevent the cervix from advancing far from the posterior pelvic wall.

The position of the uterus in the living body is also under the influence of its own weight, and of abdominal pressure; the former is hardly perceptible, but the latter is an important factor in maintaining the organ in the normal position.

When a woman is standing upright and her rectum and bladder are empty, her uterus is nearly horizontal, is more or less anteflected, and is turned a little to the right. This position is to a certain extent modified by the repletion of the bladder and rectum.

A certain degree of mobility, and a possibility of spontaneous yet considerable variation, are essential characteristics of the normal position of the uterus.

The position of the uterus during life is determined by bimanual palpation, by measurements taken by the compass, by the sound, and by the goniometer.

After death there is a cessation of intra-abdominal pressure, and also, as far as depends on muscular tonicity, of the action of the round ligaments and of the ligaments of Douglas; the weight of the organ becomes relatively more important, and the uterus is, therefore, often found in the dead body in a position different from that it occupied during life.

The position of the ovaries is, to a certain extent, independent of that of the uterus. They are attached to the walls of the pelvis on either side with their longitudinal axes parallel to its antero-posterior diameter. Their connection to the pelvis is situated higher and further back than that to the uterus. When the patient is lying down we may, by digital examination per vaginam, feel their uterine extremities directed a little backwards at their median attachments, and their free borders directed backwards and downwards.

Chapter II.

DEFINITIONS OF THE DISPLACEMENTS, CLASSIFICATION AND STATISTICS.

§ 17. If the uterus be displaced in the direction of one of its normal daily movements to a greater extent than it should be, as when an over-distended bladder forces it into retroposition or retroversion, or an accumulation in the over-distended rectum elevates it or thrusts it forward, or some unusual action of abdominal pressure considerably depresses it, the position occupied by the uterus in these cases is no doubt for the time abnormal, but, so long as the organ can return spontaneously into its normal position when the action of unnatural causes ceases, these excursions do not constitute displacement in the clinical sense. Displacements of the womb are only considered pathological when they are more or less permanent; limitation or obstruction in its normal movements being a characteristic of displacements of the organ.

This statement may at first sight appear to be a paradox; for many of the displacements of the womb are due to relaxation of its normal attachments, and in the absence of accidental peritoneal adhesions, exhibit on digital examination a passive mobility quite abnormal. Thus by keeping the dorso-horizontal position, a prolapsed uterus may be spontaneously reduced, to return, however, when the upright position is resumed or abdominal pressure put in action to its formerly prolapsed condition. But this anomalous mobility itself leads to a permanent desertion of the normal position, and even though the dislocated uterus retains this mobility, and though it may also be subject to extensive anomalous movements quite independent of the examiner's palpation, still the normal movements proper to the organ are thereby interfered with or even do not occur at all.

§ 18. Abnormal mobility is therefore, as has been proved, a necessary intermediate condition of the uterus in its passage from its normal position into certain displacements, and since

this excessive mobility may exist as an intermediate state for a time more or less considerable, it has come with some justice to be itself looked upon as a displacement.

Excessive mobility of the uterus depends on relaxation or extension of its attachments, and is a condition of great importance, not only from an etiological, but also from a therapeutical point of view. Diseases are generally more beneficially treated in their early stages than after they have existed for some time, and in the same way recent relaxation of the uterine ligaments is generally more rapidly and more permanently benefitted by proper treatment, than the permanent displacements resulting from it. And by no means rarely, we have the chance of adopting such treatment, for the frequent variations in the tension and pressure of the uterine attachments and adnexa, cause great pain and distress, often indeed far greater than that which continues after the uterus has come to rest in any permanent position of displacement.

This pain and distress return again for a time whenever a retroflected or retroverted uterus is imperfectly replaced in its proper position, perhaps unintentionally during an examination, or even when the reposition has been complete, unless the uterus be secured in its normal position.

We shall resume the consideration of excessive mobility of the uterus when speaking of retroflexion and prolapse, of each of which displacements it is a preliminary condition.

§ 19. *Fixation of the uterus.*—When the mobility of the uterus is diminished in every direction by pathological causes, and the normal movements, integral elements of its normal position are impeded, this fixation may be looked on as a displacement, quite as correctly as a generally increased mobility of the uterus, perhaps even more so.

The uterus may be fixed in a mould of peritoneal exudation, but as it is the connective tissue attachments of the upper part of the cervix to the bladder and pelvis which if no tumours are in contact with the organ, secure at once the normal position and normal mobility of the uterus, it is generally inflammatory infiltration and cicatricial contraction of this parametric connective tissue which leads to fixation. The ultimate result of such processes in most cases is to place the

uterus in a position which it never occupies in any of its daily normal movements, and about the character of which, as constituting a displacement, there cannot therefore be any difference of opinion. We must, however, also consider the uterus to be displaced, when it adopts as permanent a position that may not be abnormal when only temporary: thus, any uterus that is prevented from taking up the position that is normal to it when the bladder is full or when it is empty, must be looked on as displaced.

As long as the inflammatory processes above mentioned are in activity, they are the bases for determining the indications for treatment, and therefore the question as to whether abnormal fixation of the uterus is to be considered a displacement or not, is of no practical consequence, but it was nevertheless necessary to discuss it for the sake of accuracy in the definition.

§ 20. For the purpose of classification the displacements of the uterus may be appropriately considered from several points of view; one may separate those that are congenital from those that are acquired, those displacements which originate during fœtal life and childhood being essentially different from those of the child-bearing age, in the influence they have on the development of the organ itself. We may further distinguish the displacements caused by the pressure of extraneous tumours from such as are due to intrinsic affections, and those caused by relaxation of the normal attachments of the uterus from those caused by shortening of these attachments, which distinctions are to some extent of critical importance as to prognosis and treatment.

But as a foundation for classifying the displacements, the best principle of arrangement is to distinguish them according to the direction in which their variation from the normal is greatest. Indeed, it is from the direction of this displacement from the normal that each displacement has been named. Accordingly we recognise elevation, descent, and prolapse of the uterus; anteposition, retroposition, dextroposition, and sinistroposition; anteversion, retroversion, dextroversion, and sinistroversion; anteflexion, retroflexion, dextroflexion, and sinistroflexion. Moreover, the uterus may be twisted about its longitudinal axis, constituting torsion; it may be turned inside

out, when it is said to be inverted; or it may form part of the contents of a hernia.

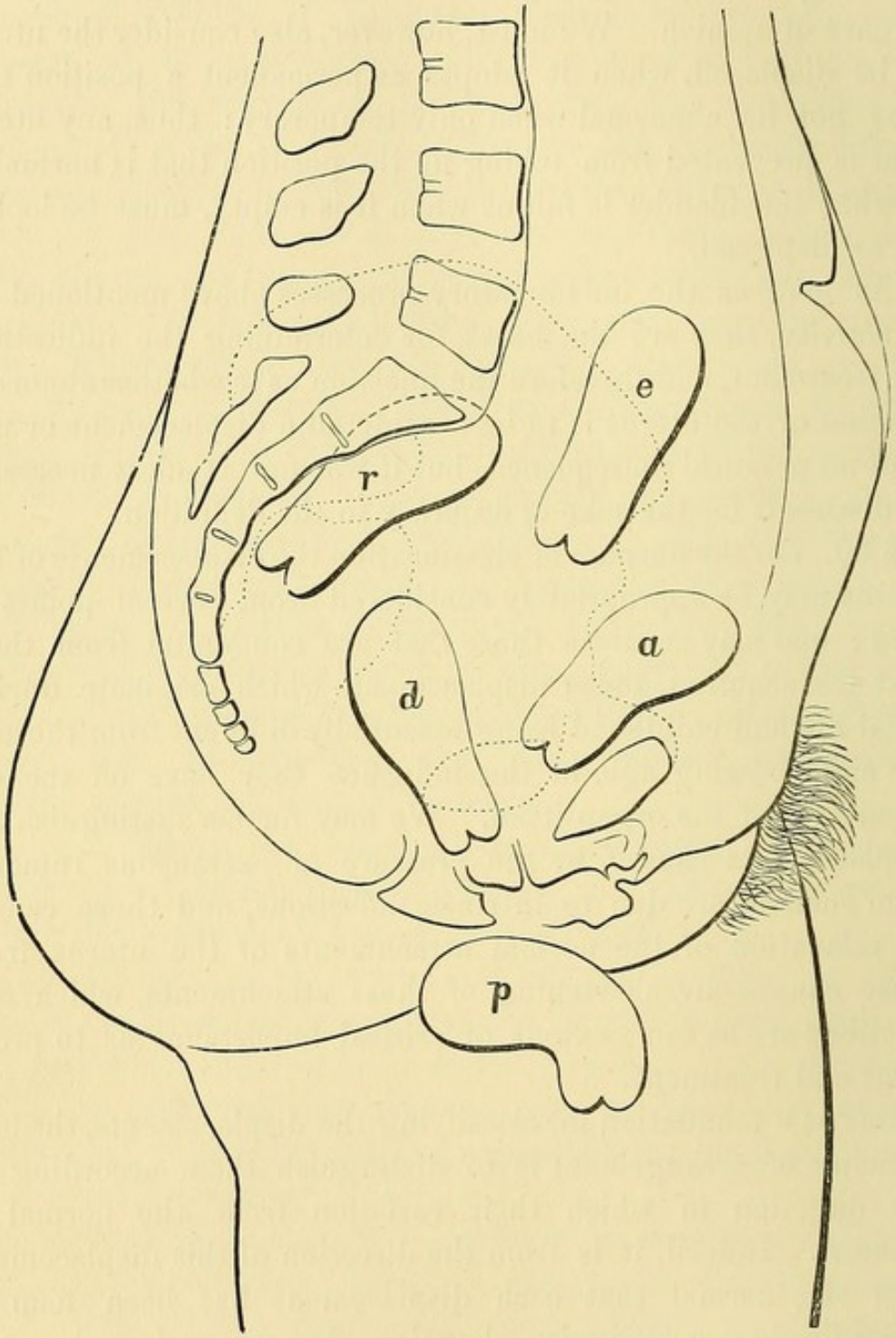


FIG. 17.—Diagram of some of the displacements of the uterus.

e. Elevation; *d*. descent combined with retroversion as it often is; *p*. complete prolapse, combined, as it often is, with retroversion; *r*. retroposition; *a*. anteposition.

These names explain themselves, but as a help to the be-

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ginner, the earlier ones in the list are represented diagrammatically in fig. 17.

§ 21. When considering the normal position of the uterus, a distinction was drawn between anteversion and anteflexion both in regard to motion and position. Anteversion is the inclination of the fundus forwards, caused by a movement of the uterus as a whole; anteflexion is the inclination of the fundus forwards, caused by a movement of the corpus uteri only, and is therefore accompanied by a change in the shape of the organ itself. We described the normal position of the uterus when the bladder is empty, as anteversion with anteflexion, because this normal position is the result of both of these movements.

It is of course of importance pathologically to distinguish between change of position and change of form, even when both co-exist, but our nomenclature must be characterised by brevity and precision, and need not contain a complete definition in every name.

Hence, in accordance with ordinary usage, pathological anteversion implies permanent inclination forwards of the fundus uteri without any flexion whatever, and in nearly all cases with complete loss of the normal flexibility of the uterus. Anteflexion implies permanent inclination forwards of the fundus uteri, the uterus being bent at an angle or curved over its anterior surface to a most variable extent, in this case the flexibility of the organ need not be affected, or it may even be greater or less than normal. Retroversion is the permanent inclination of the fundus uteri backwards, with complete absence of flexion. Retroflexion, the permanent inclination of the fundus backwards, the uterus being bent over its posterior surface.

Accordingly the expression version, as describing a pathological state, always implies the absence of any flexion, normal or abnormal, and therefore implies also a co-existing pathological extension. In the expression flexion, the co-existence of a version in the same direction is supposed to be understood. There are besides, two other conceivable combinations occasionally met with, viz:—retroversion with flexion over the anterior surface, and anteversion with flexion over the posterior surface; in such cases, special attention will be drawn to this

unusual combination. The former of these combinations happens not infrequently, where the uterus has lain for a long time, and has become inflexible, in pathological anteflexion; if the anomalous parametritic fixation, and with it the normal fixation of the uterus to the back of the pelvis, subsequently disappears, the rigid anteflexed uterus falls into retroversion.

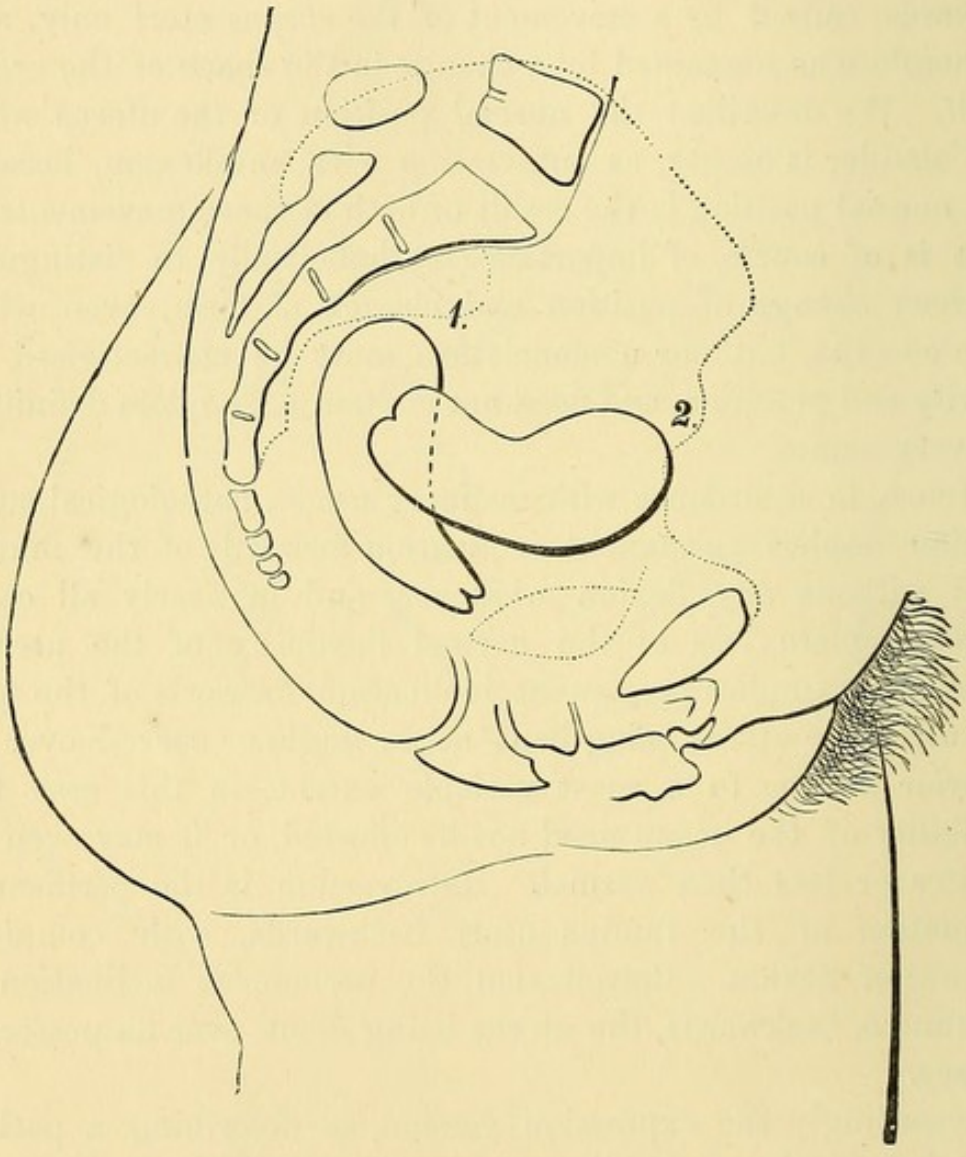


FIG. 18.—1. Retroversion with anteflexion. 2. Anteversion with retroflexion.

The combination of anteversion with bending over the posterior surface occurs, when a uterus which has become inflexible in retroflexion, is replaced in anteversion by the hand. These deviations are represented in fig. 18.

While it is thus plain that pathological extension, the result of present or past metritis, is a change of shape characteristic

of versions of the uterus, even of those which are described as pure versions, it must, in opposition to the very generally received opinion, be distinctly stated as hardly less characteristic of the flexions of the uterus, that the change in form is not due to a change in the position of the corpus uteri only. In most cases the cervix is also considerably displaced. *We might also with perfect accuracy describe the flexions of the uterus as total displacements.* The anteflexions and retroflexions of the uterus are by far the most common angular changes in the form of the organ, and it is most important for the comprehension of the etiology and indications for treatment in such cases, that we should abandon any such antiquated idea as that these flexions are only changes in shape, only partial changes in position, that in these flexions the corpus uteri only is displaced, the cervix remaining in its normal position, or being at most very slightly displaced in the same direction, and should recognise that a certain amount of anteversion is present with anteflexion, and a certain amount of retroversion with retroflexion.

As the principal normal attachment of the uterus is inserted into the upper section of the cervix, and in the normal movements of the uterus this section is least disturbed, one may in a certain sense consider a line passing transversely through this part of the cervix, as the axis about which these normal movements take place; but as was pointed out in the first chapter, it must not be supposed that even in the normal movements of the uterus, this axis is fixed. It would be absolutely false to suppose that the anomalous displacements of the organ backwards and forwards were nothing but rotations about this axis. A displacement of this axis of rotation is quite characteristic of the majority, both of the versions and flexions of the uterus, and is often the original starting point of these displacements.

To illustrate this, I have given in the adjoining figures (19 and 20) diagrams of the displacements of this axis which are in general characteristic of anteflexion and retroflexion, and of anteversion and retroversion.

I have designedly represented the type of deviation as strongly marked, and it may therefore be considered as more

extreme in the figures than it generally is in reality. To avoid confusing the picture by numerous intersecting lines, only the cavum uteri is drawn. In anteversion and anteflexion the axis of rotation is generally displaced upwards and backwards, in retroversion and retroflexion, downwards and forwards; but anteversions and anteflexions may exist in a uterus dislocated *in toto* downwards, or even prolapsed; and retro-

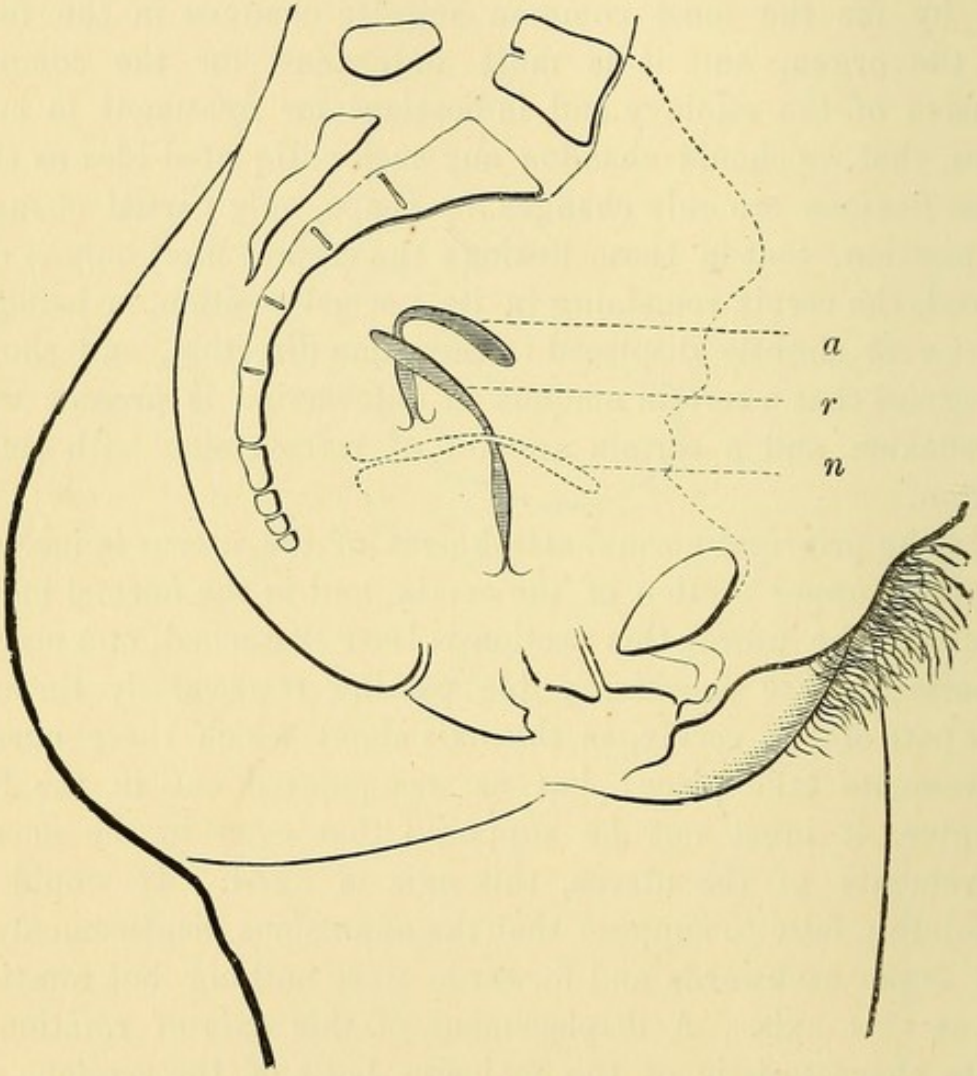


FIG. 19.—Diagrammatic representation of the commonest forms of anteflexion and retroflexion. *n*. Normal position of the cavum-uteri when the bladder is empty; *a*. anteflexion; *r*. retroflexion.

version may occur with retroposition and elevation of the axis of rotation. These rarer combinations and the conditions under which they occur will be more fully discussed when we come to speak of the different deviations individually.

§ 22. As retroflexion will be hereafter discussed with retro-

version, and anteflexion with anteversion, it is necessary to say a few words here concerning flexions in general.

The light in which the flexions of the uterus appear, when the facts that the organ is flexed under normal circumstances, and is flexible to a notable extent at the seat of its normal flexion,

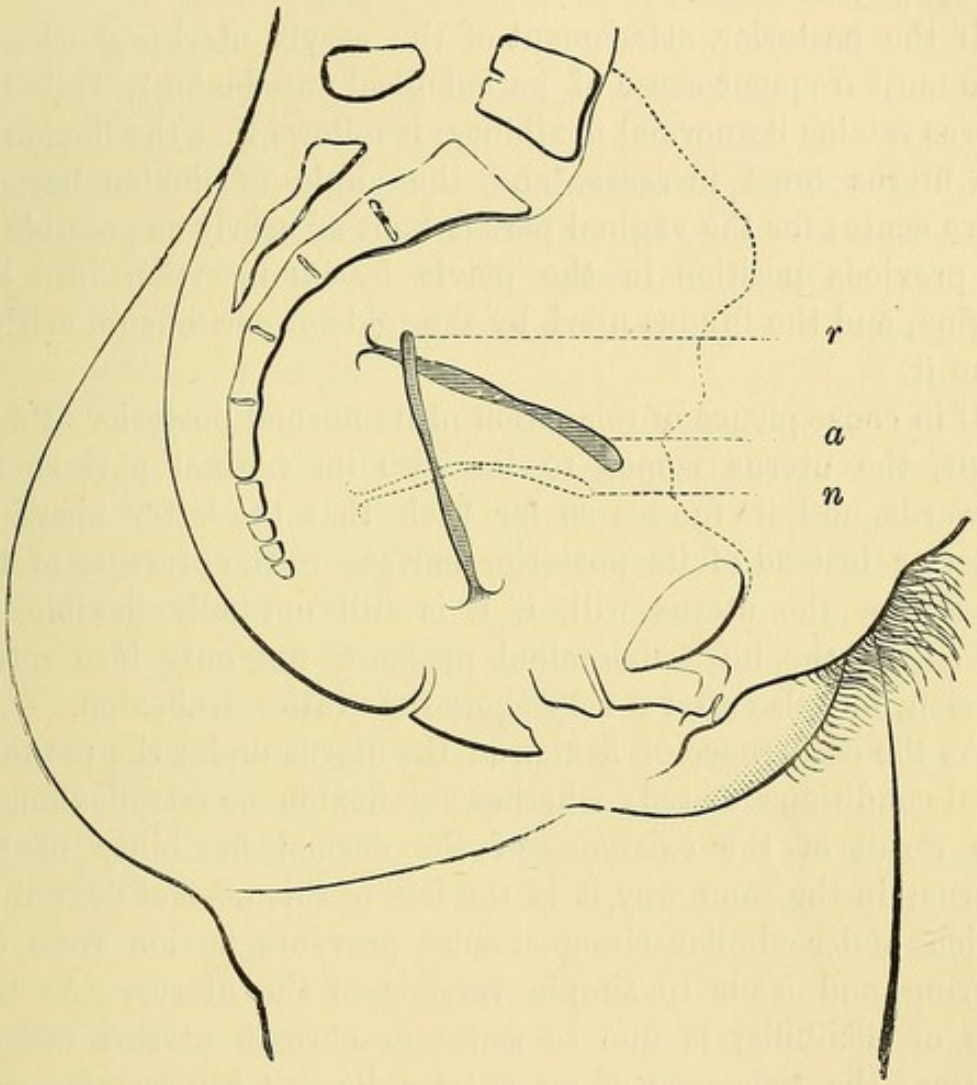


FIG. 20.—Diagrammatic representation of the commonest forms of anteversion and retroversion. *n*. Normal position of the cavum uteri when the bladder is empty; *a*. anteversion; *r*. retroversion.

are brought into consideration, is very different from that in which they were previously seen, when the normal uterus was supposed to lie extended in the axis of the pelvis. The view, corresponding with that old idea, that anteversion and retroversion are less important deviations from the normal than similar flexions of the uterus, is still often met with; but it is

only true in those rare cases, in which the uterus has become rigid in a condition of flexion. Loss of flexibility is in fact always a real aggravation of any displacement, whether the uterus has stiffened in the flexed or extended shape; whereas *flexion, even when anomalous, is in the majority of cases only an expression of the preservation of the normal flexibility of the uterus, of the integrity of its tissue.*

If the posterior attachment of the cervix uteri is shortened (the most frequent cause of pathological anteflexion), while the uterus retains its normal flexibility, it follows that the flexion of the uterus must increase, and the angle of flexion become more acute; for the vaginal part is kept as nearly as possible in its previous position in the pelvis by its insertion into the vagina, and the fundus uteri by the folds of peritoneum arising from it.

If in consequence of relaxation of its normal posterior attachment, the uterus comes to lie with its vaginal part so far forwards, and its fundus so far back, that the latter offers its anterior instead of its posterior surface to the pressure of the intestines, the uterus will, if it is still normally flexible, be forced by the intra-abdominal pressure not only into retroversion, but also after a very short time into retroflexion.

As the occurrence of flexion of the uterus under the pathological conditions stated, whether anteflexion or retroflexion, is the result of the existence of the normal flexibility of the uterus; in the same way it is the loss of this normal flexibility, which under similar circumstances prevents flexion from occurring, and leads to simple versions of the uterus. As this loss of flexibility is due to acute or chronic uterine inflammation, the existence of an anteversion or retroversion presupposes not only those pathological conditions which might have caused a similar flexion, but also their complication by metritis, or its sequelæ. Version is therefore evidently a more serious deviation from the normal than flexion.

An anteflexion or retroflexion, even when it exists for years, does not necessarily in itself prevent the uterus retaining its normal flexibility. For if, as is often the case, it may be under appropriate treatment, the contraction of the folds of Douglas which caused the anteflexion disappears, and if at the same

time the normal posterior fixation of the cervix has been destroyed by previous parametritis, the uterus generally soon falls into retroflexion. Indeed it is a common observation that if after a long standing retroflexion has been replaced bimanually, we fix the vaginal portion in or a little above its normal position in the back of the pelvis, marked anteflexion usually takes place immediately, simply from the action of intra-abdominal pressure.

But it may happen that inflammatory processes may be set up in a uterus that is already in pathological anteflexion or retroflexion, which may cause permanent rigidity in this anomalous shape. This rigid uterus with a permanent angle of flexion, a form not often met with, must of course be considered at least as great a deviation from the normal, as a uterus rigid in the extended position.

§ 23. Though the difference in the direction of the two sections of the uterus varies greatly, all attempts to classify the flexions of the uterus as of the first, second, and third degree, according to this difference have been abandoned. This is the more reasonable, because the angle of flexion in any particular case is generally far from constant. As has been already stated the uterus when flexed, generally retains its flexibility, and its shape and position, even when the flexion is pathological, will be influenced by the condition of the neighbouring organs, more especially by that of the bladder in anteflexion, and by that of the rectum in retroflexion, though not to the same extent or in the same way as under normal circumstances. It is of course important in the investigation of every case to find out the shape and with it the degree of flexion of the uterus, but a classification of the cases according to the degree of flexion cannot be made, nor would such a classification be of much clinical value.

But classifying of the cases, as infraction, flexion, or curvature, according to the sharpness of the bend so to speak, is not quite the same thing. These differences are considerable and it is always important to recognise them: we must, for example, use the sound in a very different way, in measuring a sharply bent uterus, and one that is only curved. Their importance is not so great in relation to the

symptoms and indications for treatment, yet still considerable enough to justify a classification of the cases according to the sharpness of the bend if such a classification were practicable. But in flexions of the uterus we never have to do with an angle, in the mathematical sense of the word. There is only an alteration, perhaps a considerable one, in the length of that section of the uterine canal in which the curving round from the cervix to the body takes place. The length of this section cannot be determined during life, because in an acutely flexed uterus when the sound is introduced for the purpose of doing so, the flexion is always more or less extended. Nor can the sharpness of the bend be decided by the external form of the uterus, as ascertained by vaginal examination and bimanual palpation, for this form may be partly due to swelling of the uterine wall within the reach of the fingers. It is not an uncommon thing for the uterine canal to be but slightly curved in its course, while the corpus and cervix uteri meet on their anterior or posterior surfaces at a decided angle. On the whole one finds the more acute angles and the shorter curves in anteflexions, a fact which probably depends on the original existence of normal anteflexion, on the posterior fixation of the uterus being limited to the short insertion of Douglas' folds, and on the fact that contraction of this posterior attachment is a primary factor in most anteflexions, while relaxation of the uterus and its attachments is an essential element in retroflexions.

§ 24. Both in anteflexion and retroflexion the bend is almost without exception situated about the level of the os internum, where the uterus is normally inserted into the fascia pelvis and fixed by Douglas' folds, and where the peritoneal investment passes from its anterior surface on to the bladder, that is to say in the same situation where normal anteflexion takes place. Emmet and other American physicians have drawn a distinction between flexions of the cervix and flexions of the corpus uteri, the position of the former, which are according to Emmet more frequent (182 : 163), being "at or below the vaginal junction." I have determined the place of flexion in several thousand cases of normal and pathological flexions during the twenty years that I have used flexible sounds with centi-

meter graduations sensible to the finger, and I am certain that the flexion occurs almost invariably within 4 cm. of the external orifice; in the small uterus of childhood and in the atrophied one of old age it is somewhat lower, and when the cervix is elongated somewhat higher. I quite recognise those very rare cases in which there is a deviation in the course of the cervical canal, in which from congenital formation or faulty development the vaginal part and its canal have a different direction from that of the upper part of the cervix, and I have also in some few cases met with a flexion in the body of the uterus itself, but the typical position of flexions is the junction of the cervix and corpus uteri.

As I cannot believe that the position of the point of flexion is different in American to what it is in German women, I can only suppose that my highly esteemed American colleague is mistaken as regards the position of flexion. The soft and slender cervix of unmarried and barren women is, on digital examination, easily taken to be less than its real length, and none of the women who are reported as having flexion of the cervix had carried the full term; while if Emmet's silver sound is like that of Sims in not having a graduated stem, it is no check on the digital examination in regard to the exact position of the flexion.

§ 25. Deviations of the uterus are among the most common pathological affections of the female generative organs. It is impossible to give even approximately accurate statistics of their frequency, for as yet the necessary materials for such statistics are not supplied either by pathological anatomy or clinical observation. Not by the former, because in very many, perhaps in the majority, of the cases in which the uterus was in the normal position during life, it is at the time of section the subject of a displacement; nor by the latter, because the affections of the female generative organs in general, including the displacements of the uterus, in a disproportionately large number of cases never come under our observation. This is partly due to the modesty of women who do not complain of any pain or distress which they may suffer in the pelvis until it becomes very severe, and even then very often only do so on being directly questioned by the physician, but it is also, and

indeed in a greater degree, due to the fact that a knowledge of gynecology is far less common among medical men, than that of other specialities. I do not mention this latency of the diseases of women, which is so very common, at all as a reproach, on the contrary very satisfactory advances have been made in the diffusion of information on these diseases during the last two decades. One frequently hears it said by non-professional persons, that the frequency of the diseases of the female organs of generation has increased to a remarkable extent of late years. The reason for this is that they are far more frequently recognized now than twenty years ago, and still more will be known about them twenty years hence. For whilst twenty years ago there were few medical schools in Germany in the clinics of which men could study gynecology, to-day nearly every student of medicine has ample opportunities of doing so.

As to the relative frequency of displacements of the uterus among all the diseases of the female generative organs coming under observation, we have the reports of several gynecologists. L. Meyer reported 369 displacements among 1000 cases of diseases of women; Graily Hewitt, among 1205 cases, of whom only 624 were examined, found 377 displacements, that is to say 310 per mille of all the cases or 600 per mille of those examined. In 1000 cases of my own, there were after deducting cases of tumours of the uterus and ovaries (all of which were complicated with displacements) 683 cases of displacement. Including the cases of tumours of the uterus and ovaries and counting them as displacements, the proportion would be 724 displacements in 1000 cases of diseases of women.

Graily Hewitt's statistics cannot well be compared with the others, as only a certain proportion of his cases were examined, though these were it is true selected ones.

The possible reasons for the very great difference between L. Meyer's numbers and my own are very various. A principal one may perhaps be that he only counted as displacements, those cases in which the displacement was the chief object of treatment, while I counted all cases in which a displacement was proved to exist, quite irrespective whether other affections existed in the same cases, and were perhaps the essential objects of treatment. The views of gynecologists on the clinical importance

of the different displacements varied so considerably, that I held this the only sound principle to go upon, in order to free the statistics from subjective influences. The great differences in the figures of different authors do not however depend entirely on these influences, for even if we select a displacement the pathological importance of which is clearly recognized by all, the difference in the figures is still considerable.

Thus retroflexion was observed in the following proportion per 1000 cases of diseases of women, by:—

Emmet	12
Freund (Joseph)	39
C. Meyer (Rockwitz)	45
L. Meyer	95
Graily Hewitt	94 (or 181)
B. S. Schultze	198

Per 1000 displacements retroflexion was found by:—

P. Smith	200
Meyer	257
B. S. Schultze	265
Hewitt	297

Per 1000 flexions, by:—

Emmet	84
Scanzoni	148
Freund	359
Hewitt	378
L. Meyer	415
B. S. Schultze	443
P. Smith	476
C. Meyer (Rockwitz)	504
Hueter	550

§ 26. In the following tables I give the complete statistics of the displacements which came under my observation in the six years from 1872 to 1877. During this period the notes of my observations were taken with scarcely a single exception, by laying down the position of the uterus in a diagram of the pelvis immediately after the first examination; some few cases have been omitted, but they were not selected cases, for some accidental reason notes were not taken about them.

Excluding all observations in pregnancy, labour, or the puer-

Nature of Displacement.	1. Total number of each Displacement	2. Per 1000 of 1376 cases.	3. Per 1000 of the 1199 cases (tumours excluded).	4. Per 1000 of 896 Displacements.	5. Per 1000 of 851 displaced Uteri.	6. Two displacements registered of the same Uterus. Existing Simultaneously.	7. Not existing at the same time.	
Elevation (not due to shortening of Douglas's folds)	7	5	6	7·8	8	—	—	—
Anteposition, without Retroflexion..	10	7	8	11·1	12	—	—	—
Retroposition, without Anteflexion..	33	24	28	36·8	38	8 with Retroversion.	—	1 subsequent Anteflexion. 3 ,, Retroversions.
Dextroposition	11	8	9	12·3	13	5 with Anteflexion. 2 ,, Retroflexion.	(Of which 1 with subsequent Retroflexion.)	—
Sinistroposition	22	16	18	24·6	26	8 with Anteflexion. 7 ,, Retroflexion.	(Of which 1 with subsequent Retroflexion.)	—
Dextroversion	15	11	12	16·7	17	6 with Anteflexion. 1 ,, Retroversion.	(Of which 1 with subsequent Retroversion.)	—
Sinistroversion	11	8	9	12·3	13	2 with Anteflexion. 1 ,, Retroflexion.	—	—
Lateral flexion	5	4	4	5·5	6	3 with Anteflexion. 2 ,, Anteversion.	—	—
Anteversion	79	57	66	88·2	93	2 with Lateral flexion.	2 with previous Retroversion. 2 with previous Retroflexion.	4 subsequent Retroversions.
Anteflexion	296	215	247	330·3	348	5 with Dextroposition. 8 ,, Sinistroposition. 6 ,, Dextroversion. 2 ,, Sinistroversion 3 ,, Lateral flexion.	4 with previous Retroversion. 1 with previous Retroposition.	16 subsequent Retroflexions.
Retroversion	134	100	112	149·5	157	8 with Retroposition. 1 ,, Dextroversion.	4 with previous Anteversion. 3 with previous Retroposition.	4 subsequent Anteflexions. 2 ,, Anteversions.
Retroflexion	237	172	198	264·5	279	2 with Dextroposition. 7 ,, Sinistroposition. 1 ,, Sinistroversion.	16 with previous Anteflexion.	4 subsequent Anteversions.
Prolapse	36	26	30	40·1	42	—	—	—
Total	896			999·7		90 ($\frac{1}{2}$ = 45)	32	32
Lateral position..	33	24	28	36·8	38			
Lateral version	26	19	22	29·0	31			
Anteversion and Anteflexion	375	273 } 543	313 } 622	418·5 } 832	441 } 877			
Retroversion and Retroflexion ..	371	270 }	309 }	414·0 }	436 }			
Retroversion, retroflexion and prolapse	407	296	348	454·3	478			
Anteversion and Retroversion ..	213	155 } 542	178 } 623	237·7 } 832	250 } 876			
Anteflexion and Retroflexion . ..	533	387 }	445 }	594·9 }	626 }			

peral state (six weeks after labour), I made in these six years diagrams of the condition in 1376 cases of the diseases of women. Of these 75 were large ovarian tumours, 55 uterine myomata, 47 were cases of extensive cancer of the uterus with fixation, 177 cases in all, which I considered should be registered by themselves; for though displacement of the uterus (absolute fixation being counted as one) existed in all of them, its clinical importance must, from what has been said, be here considered as of subordinate importance. In 819 cases of the remaining 1199 there was displacement of the uterus, that is to say in 683 per 1000: if the 177 cases of tumours are included as displacements, the proportion is 724 per 1000, while if the 177 are added to the number of cases, but are not included as displacements, it is 595 per 1000.

In the totals hitherto given, each unit represents an individual suffering from displacement of the uterus. If, however, as is done in the adjoining table, we wish to estimate the relative frequency of the different displacements to each other, it is necessary to register two displacements for some uteri. For instance, the cases of lateral position were for the most part cases in which the uterus was either retroflected or in pathological anteflexion: if these lateral positions were to be included in the statistics, as they undoubtedly should be, the retroflected uterus which was also in the lateral position, must be reckoned as a lateral position, and nevertheless cannot be omitted in counting up the retroflexions.

I have avoided this double registration as far as possible. A prolapsed uterus, though always retroverted or retroflected, is entered only under prolapse, and torsions of the uterus occurring as complications of other displacements have not been entered in the tables at all. Double registration has been made of two displacements coexisting in 45 cases, of which the last column of the table but one affords an exact account.

Another reason for which it was necessary to register some other (32) uteri twice over was that different displacements were observed in them at different times. For instance, in sixteen cases a uterus which was at first fixed in pathological anteflexion, subsequently fell into retroflexion. An account of these cases is given in the last column of the table. In this

way the total number of displacements in the first column amounts to 896, though the observations were made on only 819 patients. The second column of the table contains the proportion per thousand of each displacement, calculated from the whole number of 1376 cases. The third column gives the same proportion, calculated from the 1199 cases not affected by tumours, the 177 cases above mentioned being excluded. The fourth column gives the proportion per thousand of each displacement, calculated from the total number of 896 displacements observed; and in the fifth is the proportion per thousand of each of the displacements to the total number of displaced uteri. In this last column the calculation must not be made for 819 patients, but rather for 851, for the 45 cases in which two coexisting displacements were registered, must only be counted once, but those 32 patients in whom different displacements were observed at different times, must be counted twice. In the seven horizontal lines at the foot of the table, the proportion per 1000 of certain groups of displacements calculated from the same numbers, is stated. The displacements of the uterus in the 177 cases complicated by tumours are not included in any column of the table.

§ 27. The uterus, when in an abnormal position, generally exhibits displacements in several directions, but it is desirable to make the descriptions as simple as possible, and to avoid, where it can be done, entering the same uterus twice over in the statistics. The definition and name of each displacement affords more or less legitimate scope for subjective ideas, and it is necessary for the sake of mutual comprehension, that the same names and definitions should, as far as possible, be used by all gynecologists. Some further explanation of the table is required on this and some other points.

1. Distinct *elevation* of the uterus must always exist if the folds of Douglas are shortened to any considerable extent; hence most retropositions and very many anteflexions, which are caused by contraction of these folds, are associated with distinct elevation; these displacements are nevertheless known as retroposition and anteflexion respectively, and are properly so-called. Under the heading elevation in the statistics, therefore, only those very rare cases are enumerated in which the

uterus is raised upwards by some cause other than the contraction of Douglas' folds.

2. *Anteposition* of the cervix uteri occurs in many retroversions and most retroflexions. In the strict sense of the word anteposition denotes the displacement forwards of the uterus as a whole—without retroversion or retroflexion.

3. *Retroposition* of the cervix uteri is the cause as well as an enduring symptom of most anteflexions. The uterus is said to be in retroposition only when it lies, not in anteflexion, but nearly straight and with the fundus somewhat backwards.

4. *Dextroposition* or *sinistroposition* (with at the same time retroposition and elevation) is given to the axis of rotation of the uterus by the contraction of one or other of the folds of Douglas. There is usually in such a case, with decided anteflexion, considerable torsion of the uterus also, from which latter this displacement derives its name. The uterus is said to be in dextroposition or sinistroposition only when its entire lateral edge is approximated to the corresponding side of the pelvis. Slight displacements of this sort are not rare. I have registered as dextroposition and sinistroposition those cases only in which the uterus was moved out of the median plane to such an extent at least, that its lateral edge was left just touching this plane.

5. The terms *dextroversion* and *sinistroversion, dextroflexion* and *sinistroflexion* are applied by many authors to those anteversions and anteflexions which are associated with torsion, but in which the inclination or curving of the uterus is over that surface of the organ that was originally anterior. As lateral versions and flexions of the uterus I have considered only those rare cases in which the inclination or flexion has taken place over the lateral edge of the organ.

6. To avoid double registration of the same uterus as far as possible, *torsions* of the uterus which were only deviations associated either with anteversions, more often still with pathological anteflexions, or less frequently even with retroversions or retroflexions, are not included in the statistics.

7. In regard to the definition of pathological *anteflexion,* which has been the subject of so much argument, I refer to what has already been said and to the second part of this work; only

remarking here that I have reckoned under the retroversions the rare cases of anteflexion combined with retroversion. I am of opinion that where there is any doubt, the direction of the corpus uteri must, as a rule, decide the name. I do not consider the description, retroflexion with anteflexion, that certain authors give to acute anteflexion such as that represented in Fig. 19, *a*, correct. Were we to include the direction of the cervix as well as that of the corpus uteri in the definition of every case, the nomenclature would become too complicated and would therefore be unreliable.

8. *Descent of the uterus.* The displacement diagnosed with such excessive frequency is absent from the list I have given of my observations. In my opinion this diagnosis shows nothing but that the examining finger has reached the vaginal portion with unusual facility, a circumstance resulting more frequently from deficiency of fat in the external parts and other accessory circumstances, and more frequently still from abnormal anteposition, than from descent of the vaginal portion. In every case in which the vaginal portion suggested this condition to me, bimanual palpation proved that there was retroversion or retroflexion of the corpus uteri. Descent of the uterus is therefore included under the headings retroversion and retroflexion.

9. I did not meet with an *inverted uterus* nor with one lying in a hernial sac during the six years to which the table refers, and consequently these displacements do not appear in it.

10. It must be specially noticed that the sixth and seventh columns of the table, so far from giving, even approximately, a comprehensive review of the combinations and transformations of the displacements, account only for those double registrations of the same uterus that were absolutely unavoidable to make the table complete. It would for example have been unjustifiable to have classified as one displacement the six dextroversions combined with pathological anteflexion, or to have only counted once the sixteen uteri which were observed first in anteflexion and afterwards in retroflexion.

SUMMARY.

Abnormal movements, whatever their direction or extent, are not, if only temporary, to be considered as displacements, only such changes of position as are more or less stable can be so considered. Inhibition or limitation of the normal movement of the uterus is an essential characteristic of displacement. Excessive mobility is necessarily a condition of the uterus preceding many displacements, more especially retroflexion and prolapse; in itself a cause of great suffering, it is a condition favourable for treatment. Though pathological flexions are changes in the position of the uterus, it is important to distinguish between change in position and change in shape; the change in position is generally primary, the flexion depending on the persistence of normal flexibility. Rigidity of the angle of flexion is a comparatively rare complication and comes on later. The seat of the flexion is generally at the level of the os internum, at the place where anteflexion normally exists. Authors differ so greatly as to the frequency of displacements that nothing definite can be stated on this point.

CHAPTER III.

THE SYMPTOMS AND DIAGNOSIS OF DISPLACEMENTS OF THE UTERUS.

§ 28. The symptoms and diagnosis of each of the displacements of the uterus will receive separate consideration, but there are certain points of view from which these affections should be looked at in common. This is more particularly the case with those most frequently met with, anteversion and retroversion, and anteflexion and retroflexion, which according to the table given constitute together, 832 of every 1000 displacements met with.

More than half the cases of the diseases of women are complicated by one of these displacements, but in spite of their frequency, the views of prominent authors upon the symptoms they give rise to, are extremely divergent, and this divergence presupposes great difficulties in defining the symptoms in question. These difficulties seem in reality to depend on the multiple and various ways in which the displacements themselves are complicated by other affections of the uterus and its adnexa, affections from which the same or very similar symptoms arise even when there is no displacement of the uterus. As the recognition of these associated affections is often less easy than that of the displacement itself, or at all events as the latter is more imposing than the former, certain symptoms have naturally been attributed to the displacement that are really due to some complication that may perhaps have been overlooked.

This mistake was, and still is, so frequently met with in practice, that many who have detected it consider that displacements have, as a rule, but little importance, and attribute to the complications the symptoms of the displacement itself. This view has naturally been most acceptable to those physicians who have had least opportunity for gynecological study.

It is in fact often possible to completely cure the morbid symptoms associated with a displacement of the uterus without making any attempt to remove the displacement itself, and numerous cases are recorded in which these affections of the uterus have not given rise to any morbid symptom at all. Indeed in regard to many of the displacements of the uterus it is the rule for them to cause no symptoms whatever before and after the age of child-bearing.

§ 29. This is the reason that symptoms which are undoubtedly often found associated with displacements of the uterus, are by some ascribed to the displacement itself, and by others to the complications existing, more or less accidentally, with the displacement. Indeed, even at the present time, the opinion that displacements of the uterus have no effect upon the general state of health and are without symptoms, is proclaimed in some places, and one often finds this idea acted upon in practice. For one class of cases the former explanation is correct and for another the latter, the primary fault on both sides being excessive generalisation. An exhaustive analysis of the origin of the symptoms of every patient is a troublesome matter, and it is easier, where a displacement has been discovered, to make it in every case responsible for all symptoms affecting the genital organs, or more easy still to say that it is always irrelevant, for then it is not necessary to diagnose it at all.

The difficulty of defining the symptoms was farther greatly increased for those who recognised that anteflexion is a normal and not an abnormal position of the uterus, as it used always to be considered: for this recognition fortunately made it necessary in many cases of disease to find another, and that the true, explanation of morbid symptoms previously attributed to anteflexion.

§ 30. The principal *complications* to be considered in connection with displacements of the uterus are chronic metritis, perimetritis, parametritis, stenosis, chronic catarrh and oöphoritis. Their relation to coexisting displacements are very various. In one case, they may be the active cause of the displacement, in another they may themselves be its effect; both displacement and complication may arise from the same cause, or

finally, it may be impossible to prove any causal relation between them, so that the complication must be considered an accidental one.

Of the *symptoms* to be explained some affect the uterus itself, such as dysmenorrhœa, profuse menstruation, sterility, etc., and some the organs in its immediate neighbourhood, particularly the bladder and rectum; others may consist in disturbances of function in distant organs, or of the general condition of health; hemicrania, cardialgia or other neuralgias, paralysis, chorea, epilepsy, hysteria, nervous dyspepsia, anæmia, and chlorosis.

§ 31. The question now to be determined is, to which individual affection, whether to one of the displacements or to one of the complications, each of the symptoms above mentioned is most nearly related; and secondly, whether any, and if so, what sort of causal relation exists between each of the complications and the several displacements of the uterus.

This is the task we have to lay ourselves out to accomplish, though without the least hope of completing it at once; for that the united labour for many years will be required. The symptoms and complications mentioned must be carefully observed and exactly noted in as large a number of cases as possible; and valuable conclusions may afterwards be drawn from the manner in which alteration of the symptoms corresponds with the alteration in the position of the uterus, and especially with the effects of treatment.

§ 32. In the following paragraphs I have endeavoured to analyse a few of the principal symptoms that either are, or are said to be, due to displacements of the womb. For this purpose the definition of the displacements must be quite independent of the symptoms, or any such attempt would be useless—would be in fact mere arguing in a circle.

It is evident, that any affection of which the symptoms are to be made out, must first be defined *anatomically*, and that the symptoms which are sought to be discovered cannot themselves give the *definition* of the affection. How far the symptoms, *after they have been ascertained to be such*, may perhaps assist in *diagnosis* is quite another question.

I would tacitly have supposed this to be self-evident were it

not that lately the differentiation of pathological from normal anteflexion, *by means of the symptoms* to which it gives rise, had been zealously advocated with some warmth against me.

§ 33. *Dysmenorrhœa.*—Painful menstruation is a symptom commonly associated with displacements of the uterus. It consists generally in violent pains, very like labour pains, preceding the commencement of the hæmorrhage by some hours or days, and continuing with unabated violence during the early period of the bleeding. As soon as the discharge, which is as a rule at first very slight, has flowed freely for some time, these pains diminish or altogether cease, occasionally recurring on the diminution of the hæmorrhage.

Dysmenorrhœa is most commonly observed in connection with pathological flexions of the uterus, and most particularly with anteflexion, but it also occurs when the uterus is extended, and even when the shape and position of the organ are completely normal. The explanation most generally given at the present day refers this symptom directly to the flexion. Thus Schröder says, in the fourth edition of his "Diseases of the Female Generative Organs," 1879, p. 148, "the blood is poured out within the cavity of the uterus but can only escape with difficulty, because of the flexion at the inner os, so that repeated contractions of the muscular tissue of the uterus are required to force it through the contracted part of the canal." This explanation of the dysmenorrhœa so frequently associated with anteflexion, is generally received, but is quite incorrect. During the time that the pains of dysmenorrhœa are most violent, pains, which according to this theory depend on the retention of blood in the cavity of the uterus, the sound may be passed over and over again as far as the fundus without a single drop of blood following its removal, indeed without a single drop of blood leaving the uterus for hours or even days afterwards though the passage is thus proved to be free. Scanzoni and I have frequently demonstrated this in acutely anteflexed uteri, and the proof can be repeated in any case of pathological anteflexion with a suitably curved sound, the introduction of which will do no harm.

This constantly reiterated theory of the cause of the dysmenorrhœa so often associated with flexions of the uterus, particu-

larly with pathological anteflexion, is therefore undoubtedly false. At the time these dysmenorrhœal pains happen, no blood has been poured out within the uterus.

In my earlier works I have repeatedly supported the view that the dysmenorrhœa associated with flexions of the uterus, particularly with pathological anteflexion, is caused by metritis. Pathological anteflexion is in most cases due to shortening of the folds of Douglas, caused by parametritis or perimetritis, which again are generally accompanied by metritis and endometritis. These inflammatory processes generally yield rapidly to appropriate treatment, but in many cases the shortening of Douglas' folds is more permanent, and the uterus remains in acute anteflexion. If the metritis be cured, painless menstruation supersedes the previously existing dysmenorrhœa, although the shape and position of the uterus is not altered, and the dysmenorrhœa at once recurs if the metritis becomes worse again.

Dysmenorrhœa may also affect a uterus which, though not flexed, is the seat of acute or chronic inflammation, and when it does so in a case of anteversion its cause is distinctly indicated. A uterus stiffened in extension from chronic metritis, and fixed in anteversion by coexisting parametritis posterior, may be affected by the most acute dysmenorrhœa of the above character. If under suitable treatment the metritis subsides, or it may be disappears, the uterus regains its flexibility, and the folds of Douglas being considerably shortened by the parametritis posterior, more or less stable flexion is developed. In spite of the existence and increase of flexion the dysmenorrhœa improves in the same measure as the metritis diminishes and the flexibility and flexion increase. Such observations are irrefragable proofs that the metritis and not the flexion is the cause of the dysmenorrhœa. That flexion is the cause of the dysmenorrhœa is, however, in spite of this explanation still believed like a dogma.

A dogma needs no foundation, and has therefore the advantage of being almost out of the reach of refutation; still I should like to find out what fascination there is in this dogmatic explanation of dysmenorrhœa that is continually being enunciated over again, and constantly finding renewed accept-

ance. It is probably because the pains are so like those of labour that the idea of retention of the effused blood is so persistent, so that the patients themselves say in their misery, "the discharge cannot escape," or "if only the blood could get out." Now if a woman with an empty bladder was tormented by tenesmus, and told the doctor that her bladder was really full of water, he would consider it as the silly misconception of an uninformed person, and would not be led astray in his objective diagnosis. If it is insisted that when the uterus is the seat of painful tenesmus there is retention of blood in the cavity of the organ, why is not a catheter or sound introduced? The passage is much freer than that through the spasmodically contracted sphincter vesicæ. Is it for fear of dis-illusion? The theory of retention of blood would be a most convenient one if it fitted the case. If the passage is shut up by the flexion at the inner os, somewhat as it is in a flexed India-rubber tube, the most simple mechanical explanation is found not only for the dysmenorrhœa, but also for the sterility so very commonly associated with flexion; the mechanical obstacle would prevent the entrance of the semen in the same way as it does the exit of blood. But even in relation to the symptoms the theory in no way fits in with the facts it should explain. The pains, which have to be explained, begin as a rule before the commencement of the discharge of blood, often a long time before it, they continue violent as long as the catamenial discharge, consisting principally of mucous slightly marked with blood, to the escape of which the passage offers no obstruction, is scanty. Directly the blood becomes more plentiful, the pains diminish or cease altogether. *A priori* one would certainly suppose that when a mechanical impediment to the discharge of effused blood had to be overcome by painful contractions of the uterus, a more copious outflow could only take place by means of contractions more powerful and more painful. Indeed we see that this is the case in regard to the menstrual pains whenever stenosis or some other obstruction of the orifice is found on objective examination. Where, on the other hand, the pains precede the hæmorrhage and accompany the scanty discharge with which it begins, but diminish as soon as the blood flows more freely, in my opinion the dis-

tension of the uterine *vessels* which precedes the effusion of the blood is a far more probable explanation of the pain caused by the uterine contractions than the distension of the uterine *cavity* before the discharge commences (quite apart from the fact that the cavum uteri can be objectively proved to be empty). Moreover, we see in other cases how spasmodic muscular contractions cause pain in themselves and invariably do so when they cause tension in tissues which are the seat of inflammation. We have an example in the uterus itself. Thus women in their first confinement do not, as a rule, suffer at all from the after pains which become so very distressing as soon as childbed is accompanied by puerperal metritis and parametritis. There is no doubt that menstruation is under normal circumstances accompanied by uterine contractions, and when the organ is inflamed these contractions become painfully sensible. The longer the congestion continues without hæmorrhage taking place, the more violent and distressing does the tenesmus become. The occurrence of copious bleeding unburdens the distended vessels, and diminishes the contractions and the suffering they cause.

It is hardly necessary to mention that there may be other causes for dysmenorrhœa affecting any uterus whether it be in the normal position, in pathological anteflexion, or any other abnormal position, or, that several causes of dysmenorrhœa may be in action in one patient at the same time. It must be remarked particularly that for two reasons dysmenorrhœa due to stenosis is more frequently met with in cases of flexion: firstly, because primary contraction of the cervical canal often coexists with excessive flexibility of the uterus persistent from childhood; and secondly, stenosis of the internal os may be a result of anteflexion existing for many years along with uterine catarrh, this occurs seldom it is true during the child-bearing period, but more frequently after menstruation has ceased.

§ 34. There are two further observations to be made in regard to stenosis. In the first place, stenosis is much less common than its diagnosis. It frequently happens that stenosis is said to exist on account of some difficulty in introducing the sound, whether this difficulty be surmounted or not. But it is very much oftener the direction than the size of the canal that causes any difficulty of this sort. The uterus, when normally

flexible and movable, slips over the instrument if the latter is carefully introduced, even though the direction given to it may differ very materially from that in which the uterus itself was previously lying. But if the uterus is in any way fixed, the sound cannot be passed unless its point be carried forwards in the direction of the cavity; and, even after the shape and position of the uterus have been exactly ascertained, it is often very difficult to bend the sound into such a shape that it can be introduced into the cavity.

Now if we consider that very often the sound is employed while the position and shape, mobility or fixation of the uterus are unknown, (indeed many hold these qualities are most properly investigated by the instrument itself); and it be further considered that many practitioners, indeed many specialists, make use of one and the same form of sound in every case, it will be plain that in a very great number of cases the introduction of the instrument must meet with obstacles from the mere direction of the canal, though the latter may be in no way abnormal as to the size of its lumen.

Secondly, the limit below which the lumen of the uterine canal must be considered as abnormally small, must be settled on anatomical grounds. No theories as to the suitability of a certain size, nor any symptoms which may have been put down to the width or narrowness of the canal, but simply the relative frequency must decide the standard.

According to a very large number of measurements which I made in living women, 4 mm. is the lower limit of the normal diameter of the canal in its narrowest part, the internal os. A sound whose knob has a transverse diameter, of 4 mm. when bent into the shape proper to each case, passes without difficulty through the internal os of an adult even if virgin uterus. The 5 mm. sound is too large for most virgin uteri but generally passes easily in women who have had children. On the other hand the cases in which the inner os is too small to admit the 4 mm. sound, are so rare that, simply for that reason, they must be considered as abnormally narrow.

The measurement of the canal alone is not sufficient to decide as to the necessity for the occurrence of mechanical dysmenorrhœa. I remember one case in which the 2 mm.

sound barely passed through the cervix uteri, and in which the menstruation, which was not profuse, was always painless. If for only one day the menstrual hæmorrhage in such a case is at all considerable, great mechanical dysmenorrhœa occurs. Moreover even if the cervix be normal in size, there is great mechanical dysmenorrhæa, if the hæmorrhage is so great that the blood coagulates in the uterus, or if the mucous membrane is cast off in large shreds (dysmenorrhœa membranacea). The uterine contractions then become painful, simply because they become more and more powerful, till the discharge is expelled. If these conditions occur in a uterus in which, from the existence of metritis, parametritis, or perimetritis, the slight gentle contractions usually accompanying menstruation already gave sensible distress, the pains increase to a serious extent, and do not diminish even when the bleeding is well established.

§ 35. *Menorrhagia.*—Excessive menstrual hæmorrhage may be caused by affections of the mucous membrane, new growths, venous congestion due to extraneous causes, etc., whether the uterus be in the normal position or displaced in any way. Displacements that may cause menorrhagia are retroversion, retroflexion, and inversion. When the fundus uteri lies backwards, the menorrhagia is nearly always painless, though there may be a great degree of flexion, a fact which is almost a proof that flexion does not cause dysmenorrhœa. The principal evidence that menorrhagia when existing with one of these displacements is actually caused by it, is that the menorrhagia generally ceases as soon as the displacement is remedied. This question is more especially considered in the second part of this work.

§ 36. *Sterility* bears to the displacements much the same relations as dysmenorrhœa. It does exist in very many cases of displacement of the uterus, partly because the same processes *e.g.* peritonitis, which have led to the latter, have left results interfering with the functions of the ovaries or of the Fallopian tubes; or because these processes, as for example parametritis, are accompanied by endometritis which is itself likely to prevent the occurrence of pregnancy.

Flexion of the uterus, most especially anteflexion, has long been, and is still by some, considered to be a cause of

sterility, although the ideas on which this opinion was founded have been greatly shaken. Thus Schröder says (*Archiv für Gyn.*, B. ix., p 77), "Though I have still no hesitation in saying that in some cases of decided flexion one finds no pathological symptom whatever, while in others, in which the flexion is slight, we meet dysmenorrhœa and sterility, I nevertheless refer the latter to the displacement." Just as it was imagined that the flexion closed up the exit for the menstrual blood, it was believed that it must in the same way bar the entrance of the semen; and the former having been arbitrarily assumed to be a fact, the latter was considered to be proved. One finds anteflexion of the uterus in most barren women, because their sterility is due to other causes than displacement of the uterus, and the latter merely preserves its normal anteflexion. There are a large number of possible causes for their sterility, or it would be more accurate to say, for their marriage being unfruitful, for the sterility depends by no means rarely upon the husband.

If obstacles which prevent the normal completion of pregnancy, are to be accounted as causes of sterility, as well as the incapability of conception, retroflexion must be mentioned. No impediment is thereby placed in the way of conception, and when the retroflexion has not existed for long the complications which might cause such impediment are generally absent. Indeed, many women with recent retroflexion conceive more frequently than others who are healthy, because their pregnancies soon end in abortion. But after retroflexion has existed for several years, incapacity for conception often comes on as the result of perimetritis and oöphoritis, of uterine catarrh, and perhaps also to some extent of the generally depressed condition of the whole system, due to hæmorrhage, catarrh, and nervous symptoms.

§ 37. *Vesical troubles* frequently accompany the displacements; in posterior superior fixation of the uterus the base of the bladder is dragged backwards, while if there is at the same time anteversion, pressure of the corpus uteri upon the superior vesical wall also comes into play. In retroversions and retroflexions the vaginal or supra-vaginal part of the cervix may press on the neck of the bladder, and in

descent and prolapse the base of the bladder may be dragged downwards by the uterus. The principal symptoms caused in this way are tenesmus, frequent desire to make water, and violent pain on the many occasions when this desire is gratified. Retention of urine may, more rarely, be caused mechanically by displacements of the uterus, and is met with in all acute displacements which are accompanied by symptoms of incarceration.

But quite independently of those disturbances of the functions of the bladder that may be induced mechanically, women affected with displacements of the uterus are very subject to urinary troubles, and before any suffering of this sort, which cannot be accounted for mechanically, is set down as nervous, an examination of the urine should invariably be made; one often may find that it depends on a moderate amount of vesical catarrh quite unsuspected, and most commonly due to extension of the catarrh of the genital canal along the urethra, or to the bladder being involved in the general venous congestion of the pelvic organs.

§ 38. *Intestinal troubles* generally accompany the displacements of the uterus, and defæcation especially, is in most cases, difficult and painful. The body of the retroflected uterus may press upon the rectum, or may, on the other hand, when the rectum is much distended, be compressed by it. In acute retroflexion or retroversion the enlarged uterus has been known to bar up the passage through the rectum so completely as to give rise to fæcal vomiting, but if the retroflexion is chronic and the uterus is but little or not-at-all enlarged, it generally finds a convenient resting place on one side of the rectum, so that neither is much incommoded by the other. Intercurrent attacks of perimetritis or oöphoritis may seriously increase the troubles in the rectum.

Constant and most tormenting pain at stool is a chronic state that may be caused by parametritis posterior, and is therefore a condition associated with the higher degrees of pathological anteflexion. This point will be more fully discussed in the special pathology. The processes of parametritis and perimetritis extend not infrequently far beyond the upper margin of the true pelvis, and acute and chronic inflammatory

affections of the cæcum and descending colon are associated, more commonly than is generally understood, with chronic pelvic peritonitis which while leading to displacements of the uterus, has itself been constantly subject to fresh stimulus to exacerbation from such affections.

§ 39. Morbid phenomena in different parts of the *nervous system* are symptoms that frequently arise from displacements of the uterus. It is but rarely that the large nerves passing through the pelvis are directly pressed upon, but obstinate sciatica of long standing is sometimes immediately and permanently cured by reposition of the retroflected uterus, a fact that proves such a causal relation exists. Pressure on the pelvic nerves is more often due to chronic inflammatory processes in the connective tissue, which are only indirectly dependent on displacement of the uterus.

Reflex or sympathetic action is more commonly the cause of the affections of distant parts of the nervous system which are symptomatic of uterine displacements, and more especially (in this case also) of retroflexion. The proof of such a connection is quite independent of the frequency with which the affections coexist, but is evident from the results of treatment. If on the permanent reposition of the uterus, hemicrania or cardialgia, which has persisted for many years in spite of orthodox treatment, disappears, either permanently as it often does, or to recur when the uterus relapses into displacement, there cannot well be any doubt as to the causal relation referred to. I will, however, take this opportunity of briefly stating that, from my experience of the effects of treatment, nervous affections of the stomach, including the whole group of symptoms known as nervous dyspepsia, depend much more frequently on chronic endometritis than on retroflexion.

The nervous symptoms which arise from uterine affections are of various kinds and very numerous, and far too little is understood of their dependence on the uterus. It would almost appear, according to the recent literature on the subject, that the knowledge that numbers of morbid phenomena in the sphere of the nervous system, including general nervousness, hysteria, and chlorosis, owe their origin and persistence in a vast number of cases to curable affections of the uterus, displacements included,

would soon be forgotten, and yet this knowledge is of practical importance; for these affections, even after they have been treated for years, by medicine, baths, cold water cures, and electricity, with no effect or with only transient mitigation, very often yield with surprising celerity to gynecological treatment. Hereditary disposition, education, psychical experiences, habits, and nourishment, have a very great influence in deciding whether the same local affection in any individual is compensated by reflex and sympathetic action or not, whether it makes the sufferer nervous or hysterical, or does not do so. Such predisposing factors afford indications that should not be undervalued, but it is the original local affection, which may be treated with the most benefit. Our aim in investigating these symptoms must be to trace the individual phenomena included in the general terms hysteria and nervousness, to individual morbid processes, especially to such processes in the female organs of generation, but as yet it is but here and there that the development of such a knowledge out of the chaos is even commencing. The pelvic organs should be included in the diagnosis in all cases of such nervous affections, and would often afford important indications for treatment.

§ 40. *Diagnosis.*—From the foregoing paragraphs it is evident that the diagnosis of the displacements of the uterus cannot be made from the symptoms, from which, even with the help of the anamnesis, the most experienced gynecologist can only deduce more or less accurate suppositions. The diagnosis depends on the examination alone, and principally on the examination by palpation.

This examination is to be made while the woman is lying on her back. The best thing for her to lie on is a sofa or any other couch of the ordinary height which is not too softly upholstered and which can be approached from either side; the examiner sits on the edge of the couch or on a stool placed close to it.

For combined bimanual, rectal and abdominal, palpation under chloroform, or the introduction of cylindrical or spoon-shaped specula followed by demonstration of the examination, it is better to place the patient near the edge of a table of the ordinary height. A position similar to that for lithotomy is

preferred for the cylindrical speculum, and the knee-elbow or the side and breast position for the spoon-shaped instrument, the examiner standing up. The examination chairs, in the invention of which great ingenuity has in some respects been displayed, may, to say the least, be dispensed with, and most of them are too high for the effective practice of bimanual palpation by gynecologists of medium stature.

The examination of a patient previously unknown should always commence with the percussion of the abdomen; next follows palpation of the abdomen. The patient should then slightly bend her thighs and rotate them outwards, and advance her sacrum forwards so as to flex the lumbar vertebral column; to enable her to do this, some special instruction is often required. Palpation *per vaginam* then follows, with the index or index and middle fingers which have of course been previously disinfected and dipped in oil or vaseline. The examining finger is slipped over the perineum into the vagina, the condition of the former, whether uninjured or marked by cicatrices, is always to be noticed by the way, as also that of the vulva, whether gaping or closed. The fingers, slowly pushed onwards, then ascertain the width and length of the vagina, the condition of the mucous membrane, the form size and consistence of the vaginal portion, and the state of the os uteri, most especially whether it is everted or lacerated in any way. These conditions are all best found out by gentle palpation without pressure, indeed if much digital pressure is used, or if the parts are supported too soon by the other hand on the abdomen. we may fail to discover peculiarities that it would be important for us to know. The fingers then ascertain the direction of the vaginal portion and its position in the pelvis. The distance of the vaginal portion from the symphysis is given by the length to which the finger has to be introduced to reach it, and, by its distance from the coccyx and from the sides of the pelvis (from the spines of the ischiæ), we can estimate any elevation or lateral displacement. It is then ascertained whether the vaginal portion is movable, and if it is, whether it is so to the same extent in every direction; a lateral position of the vaginal portion with laceration of the cervix on the same side and diminution of its mobility away from that side, is a very common condition and one very important in deciding

that there is a displacement. Slowly increased pressure is then made in the anterior and posterior vaginal vault, and on each side right and left in the direction of the pelvic inlet, to ascertain whether the finger meets with increased resistance at any point. It does so to a certain extent under normal circumstances, when the bladder is empty, from the corpus uteri in the anterior vaginal vault.

Not till this has been done are the finger tips of the other hand laid on the surface of the abdomen, at first nearly over the symphysis, then further up, and feel, at first quite gently, in the direction of the fingers in the vagina which are held with their palmar surfaces upwards. Only by little and little is the pressure of the upper hand increased, or the easily movable viscera will often escape the notice of the examiner's finger. By overcoming the tension of the abdominal walls with more manual force, one might perhaps feel the spinal column, but the slight resistance of the mobile uterus would then escape accurate perception, and the object of the examination would therefore be lost. The first condition for a successful examination is to annul as far as possible the resistance opposed to digital palpation, and for this it is not sufficient simply to uncover the abdomen; no clothing must compress the thorax of the patient, and her position must be made as comfortable to herself as possible. If she makes the abdominal walls tense herself, her attention may be drawn off by some question relating to the anamnesis previously taken of the case, a method which is generally more efficacious than any direct exhortation to relax them, or if she be told to draw a deep breath, palpation is generally more successful at the end of the expiration. If the fingers of the external hand touch the uterus, the finger in contact with the vaginal portion internally is at once sensible of the fact.

It is far better to use two fingers for the vaginal examination, not only because the middle finger is longer than the index, but still more because with two sensitive surfaces, the relative position of which can be varied, we can find out infinitely more than with one. When this is done the two fingers are not used only in the way shown in figure 1, but are separated so as to examine the vaginal vault at different points

and in different directions, and to intercept and meet the pressure of the fingers of the external hand. When the walls of the abdomen are thin and relaxed the fingers of each hand easily feel those of the other, so easily indeed, that not only the beginner, but one practiced in the examination, must always guard against the mistake of thinking his own fingers are some third body that he feels between his two hands. When we have the uterus between the fingers of our two hands we know its size, shape, and position; we can ascertain its movability as a whole, and its flexibility, which is much greater in the living than in the dead body. We can then examine thoroughly the space between the uterus and the pelvic wall, in which, as I taught as long ago as 1865, we can feel the ovaries. If one presses one finger upwards alongside the cervix with moderate force and two fingers of the external hand downwards to meet it, the ovary can hardly escape being felt. If it should not be found at once, the finger tips of the inner and outer hands should be carried at the same time from the lateral edge of the fundus uteri outwards, or on the patient being told to rotate the thigh a little inwards one can feel the belly of the psoas muscle harden, and when the muscle is again relaxed one may, by feeling downwards along its inner margin, press the ovary against the finger in the vagina.

As the state of distension of the bladder, and that of the rectum at the time of examination, modify the position of the uterus, they must naturally be taken into consideration in estimating this position. The most complete examination of the pelvis can be made when both bladder and rectum are empty, and special care should be taken to make this the case when any circumstances in connection with the patient or with the examiner may be expected to make the bimanual palpation a matter of difficulty. The distension of the intestines and stomach has also important effects on the results of the examination, which are more complete the less the abdomen contains at the time. Many a difference of opinion as to the value of bimanual palpation, as to the possibility of feeling this or that organ, and indeed, even as to the normal position of the uterus, may depend on the fact that the one gynecologist sees his patients in the morning, and the other in the afternoon.

Most examiners as a matter of habit always prefer one hand for internal, and the other for external examination, and it may be that as a rule the left hand is best fitted for internal palpation, but there are sources of error in this habit. For the recognition of lateral displacements it is most desirable that the same case should be examined a second time, the hands being changed; this method, by which even a practised examiner may occasionally catch himself tripping, is particularly recommended to beginners. It is also very desirable to obtain ocular control of the results of bimanual palpation, by frequently making an examination with the spoon-shaped speculum in the knee-elbow position directly after the palpation; this is most especially the case in regard to displacements of the uterus from the median position.

It is a more difficult matter to feel all round the uterus if it has lost its normal mobility, if it is fixed in the back of the pelvis in a position widely different from the normal, or if, besides the uterus, other tumours lie in or above the pelvis. The peculiar circumstances which make the examination difficult, and in understanding which its success entirely depends, will all be more completely discussed in the Special Pathology, Part II. of this work.

§ 41. To find out some of the anomalous positions of the uterus and their causes, it is often indispensable to palpate high up behind it, and to do so *per vaginam* is generally impossible; we can reach much further up on the cervix, even with one finger, in the rectum than in the vagina. By introducing two fingers up the rectum we can reach across the fundus uteri, to the fingers of the other hand feeling through the abdominal wall, and make a complete examination of the whole cavity of the pelvis with ease, when this is impossible from the vagina. Deep chloroform narcosis in the dorso-coccygeal position is necessary in such a case, and the knowledge thus obtained may often be supplemented with advantage, by introducing the thumb into the vagina at the same time.

When chloroform narcosis is necessary during an examination it must be complete; seminarcosis causes more difficulty than complete consciousness. It is therefore out of the question for the same person to give chloroform and then conduct the

examination, the deep narcosis must be kept up and properly superintended the whole time, and the examiner must give his entire attention to his examination; chloroform necessitates the help of a colleague to administer it.

§ 42. The examination of the uterus by the finger in the bladder, the urethra having been previously dilated, has been warmly recommended for the diagnosis of some cases (Noeggerath). Simultaneous palpation from the rectum, the vagina, and the abdominal walls in deep narcosis, has enabled me to dispense with this method of investigating the position of the uterus, and I confess that, except to find out the state of the bladder, I have never tried it. It is, however, well to be aware that even this passage is accessible to digital palpation.

For finding out the size, shape, and even the position of the uterus, it is under some circumstances very useful to examine the bladder with graduated copper sounds of different curvatures. If there is any doubt whether a tumour is the uterus itself, or though situated outside the uterus, has dispossessed the latter of its position, the relation of the bladder to the tumour may, in connection with other factors, decide the matter.

§ 43. In order to find out the position of the uterus, the examination of the uterine cavity with the sound is, in some cases, indispensable; but rarely need any one who is well skilled in bimanual digital palpation make use of this method of investigation. Bimanual examination affords a much more complete idea of the position of the organ, as it enables us to examine the shape and surroundings of the uterus and the walls of the pelvis at the same time, and if the position or, what immediately concerns the position, the mobility of the uterus is anomalous, we often by the same examination find out all the active causes there may be for such anomaly. If, however, the pelvis and the space above it are occupied by tumours, tumours that either directly connected with, or lying near, the uterus, force it out of its position, it may be doubtful, even after the most careful bimanual palpation, which of the tumours felt is the fundus uteri; the examination of the cavity with the sound must then settle the question. In such

complicated cases it is always to be remembered that the more sensible impressions of the body in question we are able to obtain—at one time—from different directions, the more completely can we realize its condition; in such cases it is a good plan to introduce two fingers far up the rectum, to pass the thumb into the vagina, and to palpate towards them with the other hand from the surface of the abdomen. If at the same time one sound held by an assistant in the bladder, and another in the uterus, are alternately taken in hand by the examiner and moved in various directions, such a four or five-fold examination will sometimes completely clear up cases that were previously obscure.

The sounds best adapted for such examinations are made of flexible copper that has no recoil and before use are given by the examiner the shape appropriate to each particular case, they are provided with a centimeter scale on the stem that can be distinctly felt by the finger at the os uteri.

Complicated cases, in which the position of the uterus, in relation to the tumours situated about it and to the pelvis, is not completely cleared up by the determination of the direction of the uterine cavity, may be elucidated by determining and laying down in an accurate diagram of the pelvis of natural size the exact angular direction of the sound, in the way shown in fig. 4, for the normal state.

Much greater importance has in many ways been given to the sound as a means of diagnosing the displacements of the uterus than I concede to it. Those who are well versed in bimanual examination will agree with me in limiting its use to the purpose above-mentioned.

The merit of Simpson and Kiwisch in having, since the year 1843, introduced the uterine sound into general use, is still a great one, but it cannot be denied that from over-estimation of its value, the development of bimanual palpation has been very much delayed. To this over-estimation of the instrument is to be attributed the fact that up to fifteen, even up to ten years ago, but very few gynecologists practised and advocated the method of bimanual palpation, although distinguished men, such as Velpeau in 1845 and Matthews Duncan in 1854, had given due prominence to its value as a means of finding out the posi-

tion of the uterus even when unimpregnated. The sound is seldom used by us now to find out the position and shape of the uterus, because a much better knowledge is obtained on these points by bimanual palpation, but we employ it all the more frequently to ascertain the dimensions of the cavity of the uterus. For this purpose exact calibration of the knob is requisite as well as the graduated stem. In the sizes which are most useful, the knobs are 3, 4 and 5 mm. in diameter. My own sounds are represented in figs. 4, 52, and 64.

§ 44. Examination with the speculum is scarcely of any assistance in finding out the position of the uterus, except as previously mentioned, for controlling the results of bimanual palpation in regard to lateral displacements. Any one who examines many cases in a symmetrical knee-elbow position with a spoon-shaped speculum must remark that, even under normal circumstances, the vaginal portion is seldom in the median position. Examination with the speculum, whether cylindrical or spoon-shaped, alters the position of the uterus, and it is better to avoid the false conception of this position that is obtained by such an examination.

By the introduction of the cylindrical speculum the vaginal portion, which previously lay with the os towards the posterior vaginal wall, is brought as nearly as possible into the axis of the speculum and vagina—into a direction which nearly corresponds with that shown at *a* in figure 15. In consequence of the great flexibility of the uterine substance, we can generally give this direction to the vaginal portion, without essentially changing the position of the corpus uteri. But if the tissue of the uterus has become rigid from chronic metritis, while at the same time the mobility of the organ as a whole is normal or more than normal, we may, simply by the introduction of the cylindrical speculum, retrovert the uterus, as at *a* in fig. 15. If the uterus is in anteversion and is moreover less moveable than normal, we know that the os cannot be brought into the direction of the speculum at all, or can be so but incompletely.

The form of the uterus is seldom changed by the introduction of the spoon-shaped speculum in the knee-elbow posture, its position on the other hand is materially altered,

the whole organ gravitates in the direction which, in the erect posture, is forwards and upwards. To ascertain the extent of this movement, the distance of the orifice from the extremity of the sacrum should be measured, in the horizontal or upright position, with a pair of slender compasses one arm of which must be introduced into the vagina as far as the orifice. The patient having then been placed on her knees and elbows, and the speculum introduced, the distance between the same points should be again taken; if it amounted to about 2 cm. in the former case, it will in the latter be as much as 9 cm. or 10 cm.

The position of the uterus will naturally be altered in another way if it is seized by the vaginal portion and drawn towards the vulva out of the position just mentioned—by such manipulation a uterus is sometimes placed in retroversion. We may in this way facilitate the entrance of the sound into a narrow or winding canal, the introduction without some such manipulation in many cases being impossible, but it must not be supposed that the position the uterus occupies spontaneously has been made out by such examination.

§ 45. Though it may appear unnecessary, I cannot omit drawing particular attention to the fact that the diagnosis is in no case completed with the diagnosis of the position of the womb and the recognition of a certain displacement. The comprehension of every complication that may affect the organs in the pelvic region, and of the general state of health of the patient, is of a significance by no means merely subsidiary. In very many cases much more important indications are given by affections other than those of the pelvic organs, and even in deciding what gynecological treatment should be adopted, the existing displacement is not always quite the first thing to be considered.

SUMMARY.

It is not easy to ascertain the symptoms of displacements as these affections are seldom uncomplicated. Their diagnosis does not depend on the symptoms but is based entirely upon the results of examination, exploration,

and bimanual palpation. Special examination chairs are unnecessary; most of those in use are much too high for the practice of bimanual palpation; a couch accessible on both sides, or a table that admits of the administration of an anæsthetic is much to be preferred. In difficult cases the most satisfactory results are obtained by bimanual palpation in the rectum and vagina, and through the abdominal walls, while the patient is in profound anæsthesia. The sound is rarely of any use in determining the position of the uterus, the introduction of this instrument, or of the speculum, causing in itself a change in the position.

CHAPTER IV.

Anatomy, Etiology and Indications for Treatment.

§ 46. From the great differences in the views that are held upon the normal position of the uterus, and upon the importance or unimportance of its various attachments, it is quite evident that the opinions of gynecologists as to the causes of the displacements to which it is subject, must also be very different, and that consequently the most opposite ideas must be held as to the indications for treatment.

It would be natural to try to obtain, from the results of pathological anatomy, some safe guidance out of this maze of opinions, and numerous attempts have been made to do so. The number of valuable anatomical facts which may be made use of in the etiological explanation of displacements, is not insignificant, but the explanation itself is naturally the more under the influence of preconceived theories, because we have to do with the results of processes whose course was finished long ago, and whose chronology is not directly revealed by their products.

It does not follow because the wall on the side of the inner angle of the flexion in a uterus which is bent over one surface is shorter, thinner, and less voluminous, than that on the outer angle, that the cause of the flexion must have been the difference in the nourishment of the two sides, nor must the peritoneal adhesions necessarily be the original cause of the displacement of a uterus fixed in an anomalous position by such adhesions.

We have seen that the normal position of the uterus in the living woman is practically maintained by muscular action, and that the uterus therefore is very frequently not found in the dead body in the position normal to it in life. As even the abnormally placed uterus is under the influence of the intra-abdominal pressure due to muscular action, we must also conclude that displacements existing during life do not neces-

sarily remain the same in the dead body. With the exception, therefore, of cases of absolute fixation of the uterus, the autopsy often gives no indication whatever as to what displacement, if any, may have existed before death, and the causes of any such displacement during life, are still less within the scope of the dissecting knife. The consequence is that the results of dissection are not as valuable in pointing out the way to the study of the displacements of the uterus, as they are in the case of other diseases, that clinical observation of these affections is deprived of the valuable guidance of pathological anatomy, and that many facts which have been proved by observations upon living women, have never been demonstrated on section.

§ 47. The last circumstance is, further, in some measure due to the fact that it is quite an exception for any displacement of the uterus to cause death, or even during the last illness of its subject, to give rise to any particular symptom that appears worthy of attention. A case of uterine displacement even if under observation for years is very rarely, and then generally by chance, completed by an autopsy, and the accidental discovery of a displacement of the uterus in the dead body nearly always lacks confrontation with previous clinical observations.

From the investigations of Virchow, Buhl, and others, we acquired a very accurate anatomical knowledge of the acute processes in the tissue of the parametrium which, as a rule puerperal, are so frequently fatal. This knowledge was afterwards supplemented by corresponding clinical observations, and the clinical observation of individual cases has since been followed so frequently by post-mortem examination, that we can now trace the anatomical changes by the patient's bedside. Of the results of such processes when acute and not fatal, and of the other far more numerous cases in which these processes in the parametrium are subacute or chronic from the beginning, we have in some instances clinical knowledge, and in others valuable anatomical observations, but the clinical knowledge is very seldom supplemented by the anatomical investigation of the same case. Yet in the displacements of the uterus most frequently met with, that is to say in versions and flexions which according to the table are 832 per mille of all that we

meet with, the etiology for the most part depends entirely on the course and consequences of these processes in the tissue of the parametrium.

It is perhaps principally on account of the want of continuity between clinical observation and post-mortem examination of the displacements, that the fact just mentioned is not yet quite sufficiently recognised. It was a gynecologist still living, namely Schröder, who declared the importance of the attachments of the uterus in regard to its displacements backwards and forwards, to be very slight, and denied that the ligaments which more particularly secured the cervix, had any influence whatever on the origin of versions and flexions. (*Volkmann's Vortrage*, 37, S 3).

I have learnt with satisfaction that Schröder has materially altered his opinion on this point (see the fourth edition of his Manual, 1879), as the theories I have advanced for many years on the etiology of the displacements of the uterus have become more and more generally accepted. This acceptation has been principally due to the more general practice of bimanual palpation and the greater dexterity acquired in it. There is however still, in the absence of the evidence of pathological anatomy, a material deficit in our knowledge of these affections.

§ 48. This deficit can and must be remedied in the same way that has already been so successful in other specialities, as for example in ophthalmology and otology. At some large clinical institution, the condition of the pelvic organs must be ascertained by palpation, in every case of acute or chronic disease in which there is a prospect of an autopsy. The position and mobility of the uterus in particular, and any contractions or other anomalies in its means of attachment must be found out, and notice must also be taken of the condition of the posterior parts of the broad ligaments which form Douglas' folds. The result of this examination must be accurately taken down immediately after it is made, not only in words, but a sketch of the parts also should be laid down, preferably in such a diagram of the pelvis as I have published for the purpose.

The anamnesis of the genital functions must be obtained especially in so far as it can afford particulars as to the age of any pathological displacement that has been discovered.

The conclusions arrived at having been precisely stated, the anatomical examination of the parts must, when the opportunity arrives, be afterwards carried out.

It may be mentioned incidentally, that it is only such post-mortems as these in direct connection with observation of the cases during life, that can give definite information on many circumstances that are perfectly normal. For as the matter stands at present, it is only when the uterus has been found to lie in the normal position during life, that we can be quite sure that the condition of its means of attachment is also thoroughly normal.

§ 49. In any systematic arrangement of the causes of the displacements of the uterus, we must separate the immediate from the remote, the acute from the chronic, and the local from the general causes.

In the consideration of the remote causes, I shall refer to the influence which the general state of health has on the occurrence of displacements of the uterus. The immediate causes are for the most part local in origin and chronic in action. We must, however, first consider those rarer causes of displacement which are acute in their action.

§ 50. Patients who seek advice on account of displacements of the uterus, generally refer the origin of the trouble they complain of, to some cause sudden in its action. This is partly due to the fact that when women are told that they are suffering from a flexion of the uterus, they associate with their idea of this mechanical displacement the idea of some mechanical cause acting suddenly: a fall, a blow, or some severe bodily shock which they may have received at some time or other, happens to be remembered and is consequently connected in their minds with the existing affection. Beside this, however, most displacements of the uterus are from time to time accompanied by inflammatory processes in the uterus itself or in its adnexa. These chronic inflammations, which must be considered partly as causes and partly as consequences of the displacement, are generally felt by the patient for the first time on the occasion of some unusual action of abdominal pressure, and it is therefore very natural for her to point to this action as the cause of a displacement that had existed long before it.

In reality the cases in which any displacement occurs suddenly are rare. The uterus lying in normal anteflexion upon a bladder containing little or no water may certainly be considerably depressed *in toto*, or forced into much more decided anteversion or anteflexion, by the action of greatly increased abdominal pressure or of a severe shock to the whole body; but it will return to its normal position when this action ceases. A very few cases only are recorded in which the fundus of an enlarged uterus in a position of anteversion or anteflexion has been forced down behind the symphysis and wedged in there. If, however, the uterus is even moderately retroverted by distension of the bladder, any excessive action of abdominal pressure falls upon its anterior surface and may force the fundus backwards so far that it passes the promontory. If such a uterus is enlarged, as in the first month of pregnancy or in the puerperal state, or from pathological causes, it may not be able to revert to its normal position out of the retroversion that has thus suddenly arisen or been increased, and may be hemmed in by the promontory. By similar causes when the bladder is very full, a uterus in moderate retroversion with its axis almost in in a direct line with that of the vagina, may be forced down into the latter, and the vagina being at the same time inverted, the vaginal portion may be driven out of the vulva. A virgin uterus which has never before left the normal position may suffer acute prolapse in this way, if some fall or exceptionally powerful action of abdominal pressure takes place suddenly while the bladder is full.

Puerperal inversion of the womb also is in most cases of acute origin.

Processes acute in themselves which displace the uterus by degrees are not rare, *e.g.* hæmatocele, parametritis: and the cases in which some process, such as parametritis or peritonitis commencing acutely, leads to dislocation of the uterus, as it passes away itself, are very numerous.

§ 51. The chronic causes which produce displacements of the uterus may be divided into those which have their origin in the organ itself, and those which affect it from without.

Those originating in the organ itself give rise, as a rule, to alterations in its form, they may however lead to displacements of the entire organ.

Difference in the nutrition of the anterior and posterior wall of the uterus, has been generally received as one of the causes of flexion. Rokitansky declared that the flexion was due to the atrophy found in the neighbourhood of the inner os, of that wall over which the flexion exists. Virchow explained this atrophy in the angle of flexion as the result of the flexion. This difference in opinion of the leading authorities on pathological anatomy has naturally been the subject of much discussion; gynecologists have pronounced in favour of one view or the other, and from it have made the necessary deductions as to prognosis and treatment.

It is also just as evident, *a priori,* that primary contraction of the anterior wall of the uterus in the neighbourhood of the inner os, must lead to anteflexion, as that a long existing anteflexion arising in some other way, may by pressure cause atrophy of the tissue lying in the angle of flexion.

The notion of atrophy is one far too general to admit of direct conclusions being drawn as to its giving rise to any definite alteration in the shape of the uterus. Shortening of one of the uterine walls does not necessarily cause it to become thinner, and deficient nutrition need not necessarily lead to both these results, the same wall may become longer as well as thinner, as was the case in the two instances of retroflexion of the fœtal uterus reported by Ruge.* The concavity, that is to say the smaller angle, will be on the side of the shorter wall, just the same whether this wall be the thicker or the thinner. When the nutrition of one of the uterine walls is increased or diminished by pathological causes, all three dimensions are as a rule affected, so that the thicker wall is also the longer.

One-sided shortening of the uterus at the seat of flexion must necessarily cause rigidity of the angle of flexion; it is found, however, that recent flexions are very seldom rigid, and even those of many years standing are so but rarely. This clinical fact shows that the atrophy at the seat of flexion, when it does exist, is but rarely an antecedent, and never a necessary result of even long-standing flexion.

The question of this atrophy of the uterine wall in the angle of flexion has by no means the universal importance that is

* Ruge, *Ztschr. f. Gyn. u Gebh.*, 1878, II. S 24.

given to it by many people, for the vast majority of flexions observed in living women are not rigid in the angle but exhibit normal or increased flexibility on both sides of it.

If the posterior fixation of a uterus that has been for years drawn backwards in anteflexion be at any time destroyed, the organ generally falls into retroflexion the first time the bladder and rectum are emptied; and as the normal fixation is destroyed with the pathological, the uterus rarely keeps its previous angularity, but is as a rule at once forced by intra-abdominal pressure into about the same degree of flexion in the opposite direction. The exceptions to this rule are rare (fig. 18).

In the same way if we replace a uterus that has lain for many years in retroflexion, we generally in doing so, put it into anteflexion, a position which it at once assumes and preserves, if the vaginal portion is fixed in the back of the pelvis by a suitable pessary. The exceptions in this case also are rare. In the majority of flexions therefore, we have to do, not with a local atrophy of the anterior or posterior wall, but with a flexibility that is still normal or more than normal on both sides.

It should be noticed, that the unfavourable prognosis which, we should attach to the flexions of the uterus if the anatomical condition referred to was always or even more usually the case, and which as a matter of fact has been, in accordance with this theory, attached to them, is materially improved by the circumstances I have stated.

Hypertrophy and other new growths in one wall of the uterus were noticed by J. Bell to be causes of flexions towards the opposite side, and E. Martin observed the same effect upon the shape of the uterus induced by subinvolution of the seat of the placental attachment. The cases in which such a causal relation can be shown are not common, but instances have come under my notice in which the fact that the normal shape was immediately restored by the removal of the new growths, proved that the causal relation did exist. Such a case is depicted in figs. 57 and 58. I have also seen myomata in the uterine wall which had a perfectly analogous effect on the shape and position of the organ. The combination of retroflexion with enlargement of the anterior wall of the uterus by the growth of a myoma, is not uncommon. This circumstance is of

course no proof of the existence of the causal relation mentioned, such proof lies before us only, if when the myoma is removed from the anterior wall of the uterus, the existing retroflexion is immediately changed into normal anteflexion.

§ 52. The idea that myomata of the anterior wall of the uterus caused anteversion and anteflexion, and myomata of the posterior wall of the uterus retroflexion, was formerly very prevalent but is now quite out of date. This idea depended on the old erroneous supposition that the uterus was suspended in the pelvis in such a way that it was balanced chiefly by its own weight, and that therefore any over-weighting of one wall or the other must tip it over. A myoma of the anterior wall generally forces the uterus directly backwards, whereas one of the posterior wall has room to develop itself upwards in the abdominal cavity without causing any displacement. Various dislocations, however, do arise from uterine myomata, one of which not altogether uncommon, and which has attracted little notice, is represented in fig. 21.

§ 53. *Metritis* must also be mentioned as one of those causes of alteration in the shape and position of the uterus, which are situated in the organ itself. From the effects of metritis parenchymatosa, whether chronic or acute, the uterus becomes rigid and loses its flexibility, and unless it is in some way fixed in anomalous flexion, loses its flexion also. This important fact was, as far as I know, first pointed out by Scanzoni.

§ 54. *Anomalous relaxation,* even if insufficient in itself to give rise to permanent displacement of the uterus, is certainly a condition which predisposes the organ for its occurrence. One of the conditions for inversion is the relaxation of the tissue of the uterus with the dilatation of its cavity existing during the puerperal state, or caused by the presence of internal tumours.

Excessive flexibility of the uterus, which may come under observation as the result of deficient or deferred development from the condition existing in childhood to that of sexual life, or as the result of prolonged chronic catarrh without parenchymatous metritis, or of premature senile or excessive puerperal involution, will be discussed with the special pathology of anteflexion.

Finally, it must be mentioned that original or acquired varia-

tion from the normal in the length and shape of the vaginal portion, are not without influence on the position of the entire organ. Compare figs. 48, 49, 50.

§ 55. *Causes of displacement of the uterus, affecting it from without.*—In connection with the influence of the vaginal portion on the position of the uterus just spoken of, an abnormal condition of the vagina must be mentioned as causing displacement of the uterus, because both these factors not unusually act at the same time.

Shortness of the vagina, and length of the vaginal portion, persisting from childhood are of importance as a cause of retroversion and anteflexion, compare thereupon, § 101 and § 114 and figs. 51 and 53.

Tumours of the vagina may dislocate the uterus; so also may hæmatokolpos, *i.e.* the accumulation of blood in a vagina which is imperforate downwards. Compare § 67, fig. 22.

I have seen several cases of decided anteposition and elevation caused by tumours growing in the rectum itself or from its walls, fig. 23. In one case (a child twelve years of age, single consultation, no post-mortem examination), the uterus was forced so far forwards and so much elevated by a retro-rectal tumour that it was pressed against the anterior abdominal wall. Tumours of the bladder cause retroposition.

Most of the tumours which affect the position of the uterus from its peritoneal surface are ovarian, but other tumours in the abdominal cavity sometimes press upon the uterus. I once saw a dislocated kidney lying on the posterior surface of an anteverted uterus, and on another occasion one lying on the anterior surface of a retroverted uterus; in each case the position of the organ was determined by the tumour, which in the latter formed an obstinate and constantly recurring impediment to the reposition of the uterus.

§ 56. *Ovarian tumours* may displace the uterus in many ways. In accordance with their normal position, the ovaries, even when enlarged, at first lie close to the posterior surface of the uterus which, when the bladder is empty, faces upwards. In the early stages of enlargement the ovary generally sinks deeper into the pelvis, and in proportion to its increased size, it at the same time advances towards the median plane behind

the uterus. The larger it becomes while lying in the pelvis, the more decided is the anteposition of the uterus, and, if it is also fastened by adhesions in Douglas' pouch, the uterus is ultimately pressed against the anterior wall of the pelvis, interfering seriously with the functions of the bladder. Such adhesions do not as a rule exist, so that, under the action of the varying distension of the pelvic organs, the ovarian tumour soon raises its greatest circumference up out of the pelvis, and the anteposition of the uterus then disappears. Since the ovarian tumour becomes more and more spherical as it grows bigger, and must therefore in time raise itself completely out of the pelvis, it comes to pass that if the pedicle of the tumour is a long one the uterus regains its mobility, and reverts to a position underneath the tumour that is approximately normal, while if the pedicle is short the uterus is elevated along with the tumour. If the pedicle be of medium length, the displacement of the uterus is generally a moderate lateral one, and essentially due to the circumstance, that of the two corners into which the Fallopian tubes are inserted, that one to which the pedicle is attached, only or to the greatest extent, is dragged upwards towards the median plane (see figure 31). The uterus may, however, be displaced in various ways, by projections of particular parts of the tumour downwards into the pelvis. The development of a large portion of an ovarian tumour between the folds of the broad ligament may cause extreme lateral position, and the whole uterus may in this way be forced up out of the pelvis towards one or other of the iliac fossæ.

According to the statements of most authors and to the observations made by Olshausen and myself, about one-third of the ovarian tumours of large and medium size lie in front of the uterus, that is to say the uterus lies in retroversion, and more or less in retroposition, underneath the tumour, and presents to the latter that surface which was originally its anterior, lower, or vesical surface.

The co-existence of an ovarian tumour and retroversion of the uterus is so remarkably frequent, that the presence of a causal relation between them can hardly be denied. It is usually supposed that the ovarian tumour causes the retroversion.

I cannot myself see how the tumour could do so during its development, if the uterus was previously in the normal position and Olshausen's explanation, that the tumour does not as it increases in size drag the uterus directly after itself so as to elevate it, but rather, as a consequence of more rapid development of its anterior wall, grows forwards over the ligamentum latum, and then presses the uterus and its adnexa backwards, seems to me to be too artificial. I think it is far more probable that in one-third of the cases, the proportion mentioned, the uterus with very few exceptions lay with its fundus backwards before the growth of the tumour. The circumstance that the fundus uteri is found in this position more frequently when the ovarian tumours are large, than when they are small, which seems to prevent Olshausen admitting the latter view, is explained by the fact that as long as the tumours have room to remain in the true pelvis, they push the uterus into anteposition, even if it was previously in retroversion or retroflexion. I have myself seen this in many cases, and have also been able to ascertain that after the ovarian tumour had risen out of the true pelvis, the uterus sank back into its previous retroversion.

If it be admitted that when an ovarian tumour coexists with retroversion of the uterus, the retroversion has generally existed before the tumour, it at once follows that the causal relation, which is suggested by the frequent coexistence of the two affections, is probably in the reverse direction, and that the existence of retroflexion of the uterus is a favourable condition for the growth of ovarian tumours. I consider this conclusion very important, and to be proved by other circumstances, the discussion of which would lead us too far from our present subject.

§ 57. *Hæmatocele retro-uterina* must be included among the peritoneal tumours which displace the uterus, for anteposition, and not infrequently elevation, are in some cases due to it (fig. 24). Retroposition may be afterwards caused by the absorption of the effused fluid and the contraction of the exudation (fig. 26).

It is remarkable how rarely exudation due to diffuse peritonitis, even when considerable, or voluminous ascites of long duration, does more than depress the uterus to a slight extent.

On the other hand, circumscribed inflammation of the peritoneum and encysted exudations, have a most important influence on the position of the uterus, displacing it not only by their bulk, but subjecting it to traction during their resorption, causing permanent adhesions of its peritoneal surface, and also contraction of those parts of peritoneum which invest the uterus and pass from it to the sides of the pelvis. It is the posterior surface of the uterus, Douglas' pouch and its immediate neighbourhood more particularly, that are often affected in this way, yet as has been already mentioned in the beginning of this chapter, it must be remembered in such cases that the flaky adhesions or the peritoneal strings which fasten the uterus in an abnormal position to the parietal peritoneum or to other viscera, are not to be pointed out as the absolute cause of origin of the displacement, but, as is proved by clinical observation, are as a rule only secondary adhesions of a uterus that has been primarily dislocated by other causes. Their importance is therefore different from, but not on that account at all less than, that commonly attributed to them; these adhesions are the fundamental cause of persistence of the displacement, and are frequently an obstinate impediment to its removal.

§ 58. The effects of *parametritis* in causing alterations in the position of the uterus are not less important than those of peritonitis. By extensive exudation in the parametrium, the uterus is dislocated towards the opposite side of the pelvis, and by the subsequent cicatricial contraction, it is drawn towards the side on which the affection was seated. Processes whose course is subacute or chronic affect the tissue of the parametrium far more frequently, as has been already mentioned, than those which are acute, and lead as was then pointed out, to contraction of the means of attachment of the uterus.

Of these processes it was stated in the beginning of this chapter (§ 48) that the investigation of their anatomy was still to be made; they are often associated with local affections of the peritoneum, and were formerly described, with these affections, under the term perimetritis. It was a necessary result of our improved knowledge, after we had learnt from Virchow to distinguish, according to their true nature, the acute inflam-

matory processes in the peritoneum itself, from those in the sub-peritoneal connective tissue, in spite of the many ways in which they complicate each other, that we should look upon the residuary effects of these acute processes as distinct from the results of the analogous chronic affections, whether on the free surface of the peritoneum or in the sub-peritoneal connective tissue.

§ 59. In the enquiry into the more *remote causes* of displacements, the history of the case generally points to some puerperal condition, premature or at full term. Even the normal puerperal processes cause such a decided disposition to the occurrence of displacements of the uterus, that the mere want of proper care in and after childbed is enough to cause their development, without any puerperal sickness at all, and in the most trivial affections so commonly occurring at this time, as well as in those that are more serious, we often have to recognize the origin of processes which in their further course necessarily lead to changes in the position of the uterus.

Very many displacements of the uterus are found in women who are virgins or have never been pregnant, and the assumption that these displacements are congenital is therefore accepted at the present time without criticism. The small soft corpus uteri of a child, the flexibility of which is still present in the organ when benumbed by death, is far more subject to external influences, both in the dead and in the living body, than that of an adult, and even greater care should be taken not to receive as habitual to it during life, the shape and position it is found in after death. Errors in development may not infrequently be recognised as causes predisposing the uterus to the anteflexion or retroversion existing in later years, which is, however, more commonly to be referred to the growth of later childhood or the virgin condition than to that of fœtal life. The causes of existing displacements may be much more frequently found, even in unmarried women, in the results of chronic peritonitis or parametritis, past or present. In my opinion habitual distension of the rectum and bladder may not only lead to relaxation of the means of attachment of the uterus, but may even cause chronic inflammation in the peritoneal folds which pass on to the uterus.

Uterine catarrh I consider to be a still commoner cause of parametritis and perimetritis in children and young maidens. Accompanied with more or less copious purulent discharge, this catarrh affects young persons whose genitals are absolutely intact much more frequently than is generally believed. As the discharge is necessarily stagnating on account of the narrowness of the only exit open to it, it would *à priori* be natural to expect it to give rise, by resorption of its constituents, to inflammatory processes in the more internal parts. The practical experience we have of the beneficial influence, that washing the stagnating secretion out of the uterus with disinfectants has upon chronic inflammatory conditions of the parametrium, even upon those of long standing, supports this view. I will make no conjecture as to how primary catarrh comes to affect the uterine mucous membrane of a child or young maiden which under normal circumstances is not accessible to external influences, and only mention that masturbation in children, and in maidens the blood flowing out at the menstrual periods, may establish a communication.

Peritoneal inflammation may also be set up by the irritation of the menstrual processes in the ovary.

It is of course not only in children and young maidens that the causal relation I have described between catarrh and displacements of the uterus, through metritis, parametritis and perimetritis, exists. The elements which may set this chain of etiological factors in action are notably increased by sexual intercourse. As additional and common causes of catarrh I may mention direct infection from man, and also lacerations of the cervix and perineum which open up a permanent passage for the atmosphere and its contagious matter, and in particular for the dust of the streets, to the mucous membrane these parts protect when intact.

§ 60. In regard to the remote causes that may be found in *the general state of health,* persons who are feeble and debilitated are undoubtedly less able to resist many of the detrimental influences which we have learnt to recognise as inducing causes of displacements. Anæmia existing from childhood or any other cause of important insufficiency in the nutrient functions of the general system will give rise to more serious symptoms,

will in most cases first attract notice, at the time when the development of puberty makes increased demands upon the organism. The same may be said as regards the processes of puerperal involution and restoration; on the other hand, it must be borne in mind in regard to the latter, that when their external circumstances admit of it, feeble persons find in their subjective feelings far more inducements to take great care of themselves and to give immediate attention to slight disturbances in their health than those who are strong do.

The disturbances in health, however, which occur during the early years of puberty, are very commonly due to affections of the genital organs. From the nature of the case, the genital affections of chlorotic young women are often not brought under the notice of any physician, or are so only after much delay, still in the majority of those cases which do come, though late, for diagnosis, the supplementary enquiry shews that the genital affection was the primary one.

The view, which predominates in many quarters, that anæmia, deficient nourishment, etc., may lead to displacement of the uterus, perhaps from the muscular tissue of the uterus and its adnexa sharing in the general debility, cannot be negatived *à priori*, but has not been proved.

§ 61. The *indications for the prophylaxis* of displacements of the uterus are drawn directly from the remote causes which have just been discussed. Over-distension of the bladder and rectum should be prevented even in childhood; at the menstrual periods, especially during the years of development, overexertion is to be avoided; chronic uterine catarrh, even when slight, must receive attention and treatment. Proper care must be exercised in childbed, especially in abortion which most young women prefer to ignore. That brief feverish indisposition which is pleasantly explained as milk fever, must be most carefully watched: it generally depends on localized attacks of parametritis which are followed by posterior fixation, and, subsequently, if not looked after, by retroflexion. The slightest lacerations of the perineum must be attended to, and when possible immediately united; if they come under observation at a later period, when the patients seek advice for uterine or vaginal catarrh, they should be then united to prevent the re-

currence of the catarrh. These are the principal points in prophylaxis.

§ 62. At the first attempt to say anything about the *general indications for treatment,* we find we must begin to specialize. One may perhaps lay down as a thing always to be desired, as our ideal aim, the reposition of the uterus in the normal position: but it would be wrong to put this forward as the ruling indication to be invariably followed. The fact that the mechanical correction of displacements of the uterus has been laid down as the indication to be always accepted, and has been carried out in practice in whole categories of cases for which it was not suitable, has already led to too many mistakes and brought all gynecological therapeutics into discredit with many, and those not the most ignorant, physicians who do not practice the speciality. The knowledge that there are some classes of displacements to which this treatment is most inappropriate has, unfortunately, been acquired by the bad effects which have resulted from it, but is not less valuable on that account. I admit this the more readily as I have myself had no share in the discovery of the fact in the way mentioned.

The pathogenesis of the different displacements gives an interpretation of this empirical knowledge and also shews the proper way to find out the indications.

If we exclude all the cases which are due to tumours of any description, the essential indications being then given by the tumour, the displacements of the uterus fall into two large classes according to their etiology. Some are caused by *anomalous fixation of the uterus,* the others *relaxation of its normal means of attachment.*

Parallel for the most part to this etiological division, there is a definite distinction between indications, themselves different in principle. In individual cases there may be an indication to rupture a peritoneal fixation of the uterus or to stretch some old adhesions by force, but for the most part, in the first of these classes we have to do with cases of contraction of the normal attachments of the uterus caused by inflammatory processes which are either still going on or may be easily set up again, and the morbid symptoms are directly due to these inflammatory processes, and not to the change in the position

of the uterus. We must therefore in these cases direct our treatment against the inflammatory processes; by curing them we may frequently restore the normal position of the uterus, and, even if the old contractions are incapable of resorption, we may re-establish the normal function and complete health of the organ though its position, anatomically considered, remains anomalous.

In the second class of cases, in which the displacement is caused by relaxation of the normal attachments of the uterus, the indications are quite different. In comparatively recent cases the tone of these attachments may be restored; where there is no prospect of doing so, we have to compensate for their lost action by mechanical means of support. Inflammatory complications generally exist in these cases also, and are the source of many symptoms which depress the patient to a dangerous extent, but they are the results and not the causes of the displacements. Mechanical reposition by operation and maintenance of the uterus in the normal position, or in one as nearly normal as possible, is therefore indicated in these cases; it removes not only the mechanical burden immediately due to the displacement, but also the active cause of the inflammatory complications.

To the first class belong the majority of pathological anteflexions and of anteversions, to the second the greater number of retroflexions and retroversions, prolapse, and inversion. If we treat the cases of the former class mechanically we do no good and run the risk of doing much injury; if in the displacements of the second class we abstain from mechanical treatment, or put it off till the inflammatory complications are removed, we abstain from the most beneficial means at our disposal for the treatment of these complications. The arrangement of the individual cases according to these indications, is the object of the second part of this work.

SUMMARY.

The clinical observation of the displacements of the uterus that are seen every day cannot be completed by their post-mortem anatomy, as these affections do not cause death.

To obtain anatomical control of many of the finer results of palpation, and in particular, to prove the proper etiological explanation of the most ordinary displacements of the uterus, the position and mobility of the organ, and particularly the nature of any displacement that may happen to exist, must be exactly determined in a large number of patients seriously ill, whose bodies there is a prospect of examining after death, and the post-mortem appearances of the pelvic organs must afterwards be compared with the condition as determined by palpation.

The causes of the displacements are either immediate or remote, local or general, chronic in their action or acute.

An acute origin of uterine displacement is very rare (retroversion and prolapse from a sudden fall, puerperal inversion), on the other hand, it is common enough for processes acute or sub-acute in themselves (hæmatocele, parametritis), to displace the uterus by degrees.

The causes which act chronically lie either in the uterus itself or outside it. Shortening of one wall of the uterus curves or bends the organ over the side that is atrophied. Lengthening of one wall curves or bends it over the opposite one. Flexions so caused are rigid in the angle, but as in the vast majority of pathological flexions, the flexibility of the uterus in the angle of flexion is normal or more than normal, the differences in the nutrition of the uterine walls just mentioned have not the general importance that has been ascribed to them. Relaxation of the uterus is a condition favourable to the occurrence of some displacements. Metritis makes the uterus rigid, and generally causes its flexion as well as its flexibility to disappear.

Tumours arising from the uterine wall may alter the position of the organ in various ways, but the theory formerly accepted that myomata of the anterior wall gave rise to anteversion or anteflexion, and those of the posterior wall to retroversion or retroflexion is now obsolete.

The causes external to the uterus which may give rise to displacements are, shortness of the vagina, tumours of the vagina, rectum, sacrum, or bladder, hæmatocele, ovarian tumours; furthermore peritonitis and parametritis and the permanent contracted cicatrices which result from them; and also relaxation of the uterine attachments.

The more remote causes generally date back to some puerperal condition. Displacements of the uterus are, however, very common among women who have never been pregnant, even in virgins. They sometimes depend upon deficient development at puberty, during childhood or, very rarely, during fœtal life, but far more frequently, even in virgins, the cause of any displacement that may exist, may be found in the results of chronic perimetritis or parametritis that has passed away or is still going on. Habitual over-distension of the rectum and bladder may also be looked upon as one of the remote causes of displacements, as also uterine catarrh, an affection by no means uncommon in virgins whose genitals are absolutely intact. It is chiefly as a remote cause of displacement that uterine catarrh is so extremely important. Stagnation of the secretion causes metritis, parametritis, and peritonitis; the effects of the two latter processes lead to displacement.

For the same reason, tears in the perineum and lacerations of the cervix, even in cases where there has been no puerperal infection of the wounds, may afterwards induce displacement. The gaping condition of the genital canal leaves the way open to the dust of the streets and atmospheric infection, and thus leads to catarrh, metritis, parametritis, and so forth.

Whether general debility, more particularly anæmia, can lead to displacement, perhaps from the muscular tissue of the uterus and its adnexa sharing in the disturbed nutrition of the general system, has as yet not been proved. At all events another explanation suits much better many cases that used to be explained in this way, before the difference between normal and pathological anteflexion was understood. Anæmia persisting from childhood or any other insufficiency for the nutrition of the important functions of the general system will, at the time that the development of puberty makes increased demands on the organism, cause more serious symptoms or perhaps for the first time disclose itself, even without there being any morbid affection of the genital organs at all. It often happens, however, that the disturbances in general health which occur in the early years of puberty—anæmia, chlorosis, and so forth—are the results of some affection of the genital organs, that proves frequently to be of an inflammatory nature.

The indications for the prophylaxis of displacements may be deduced from the remote causes. For the *indications for the treatment* of the displacements not caused by tumours it is important to distinguish the different etiology of two great classes. In one the displacements are due to anomalous fixation of the uterus, in the other to relaxation of its normal attachments. The accompanying inflammatory affections upon which the symptoms to a great extent depend are in the former the active causes of the displacements, in the latter they are the results. In cases of the first class, the treatment must be directed against the inflammatory processes, any attempt to correct the position mechanically being as a rule hurtful. In cases of the second class, the ruling indication is the mechanical restoration of the normal position; fulfilling it not only relieves all the troubles arising directly from the displacement but also removes the active causes of the inflammatory complications.

Part II.—SPECIAL PATHOLOGY.

Chapter I.

ELEVATION OF THE UTERUS.

§ 63. The hysterical sensation known as "rising of the womb" seems to be rather out of fashion. It was, however, the opinion of some of the older gynecologists, of B. Busch* among others, that dislocation of the uterus might be caused by spasmodic contraction of its ligaments, in a way that could be detected by objective examination, and it is by no means certain that this view should be entirely rejected. At all events the principal argument which Kiwisch† advances against it, viz., that from the disposition of the contractile fibres which pass from the substance of the uterus into the ligaments, it is impossible to suppose such a movement upwards, is erroneous; contraction of the folds of Douglas, in which the muscle named by Luschka "musculus retractor uteri" is situated, draws the cervix almost directly upwards (compare fig. 46). I myself have never directly observed such a movement of the uterus, but in cases of chronic parametritis posterior, I have not infrequently seen the length of Douglas' folds, and with it the position of the uterus, vary from day to day, in a way that nothing but muscular action can explain.

Cicatricial contraction of the folds of Douglas causes permanent elevation of the cervix uteri; as a necessary result of this elevation of the cervix the uterus is, in all cases, drawn towards the posterior wall of the pelvis, and, in very many, the corpus uteri is also bent sharply forwards; these dislocations are described respectively as retroposition and anteflexion. See figures 26, 47, 56, further on.

§ 64. The term elevation is more particularly applied to those dislocations of the uterus in which, while there is no increase

* Busch, *Das Geschlechtsleben des Weibes*, iii., 1841, S 472.

† Kiwisch, *Klin. Vorträge*, I., Prag. 1854, S 210.

in its own volume to account for it, the organ lies, in great part or entirely, above the true pelvis.

Such a dislocation may be caused firstly, by peritoneal adhesions, by which the uterus when it was normally extended upwards during pregnancy or childbed, was bound down and thus prevented from resuming its proper position in the pelvis during puerperal involution. In such cases of fixation from peritonitis, the body of the uterus is generally attached to the hollow of one of the iliac bones. As a result of the parametritis generally accompanying such peritonitis, cicatricial contraction takes place in the corresponding section of the parametrium, and lateral position and lateral version of the uterus is therefore generally associated with elevation of this sort. Partly from deficient involution, partly from mechanical tension, the uterus is, as a rule, increased in length; catarrh and chronic metritis are seldom absent. Elevation of this kind, with considerable lateral position and lateral version of the uterus, is shown in fig. 30.

§ 65. Secondly, elevation of the uterus may be caused in various ways by tumours of the uterus, of the ovaries, or of the vagina; these tumours will be discussed immediately.

Elevation of the uterus is also in some cases caused by tumours of Douglas' pouch, of the rectum, and of the sacrum, but as these tumours cause anteposition of the uterus in the first instance, they will be more properly considered in the following chapter.

When the uterus increases in size, whether by accumulation of fluid within its cavity, or by the growth of solid tumours, it rises up out of the true pelvis as soon as it has not room enough.

If the enlargement extends to the cervix, the whole organ may be so much elevated out of the pelvis that the vaginal vault is drawn out to a point, and the vaginal portion is shortened to nothing, and that they are hardly, if at all, within the reach of digital palpation.

Ovarian tumours with short pedicles may pull up the uterus in a similar way, but they generally do so in an oblique direction. When the uterus is elevated by the traction of tumours attached to its fundus, the tension not infrequently

causes thinning out and lengthening of the organ. This thinning of the uterine tissue is always most considerable in the neighbourhood of the inner os, and may, when the tension is very great, end in the giving way of the uterine substance, so that the corpus and fundus uteri stand a certain distance apart, connected with each other by an empty fold of peritoneum only. (Klob).

Sessile tumours of the ovary, which, enlarging chiefly at the hilus, develop between the folds of the ligamentum latum, at first only push the uterus to one side, but later on they sometimes force it so far above the lateral rim of the pelvis, that, while the corpus uteri can be felt near the spine of the ilium through the wall of the abdomen, the vaginal portion is out of the reach of digital examination, and the ovarian tumour itself fills the pelvis.

§ 66. Elevation of the uterus is caused in another way by those pedicled myomata, which arise either from the corpus or cervix uteri and, after passing the outer os, enlarge to such an extent in the vagina, that they are subjected to considerable upward pressure from the floor of the pelvis. This pressure may raise the uterus up out of the pelvis, and since it acts principally on that wall of the uterus from which the tumour arises, the elevation of the uterus will be combined with a version, an anteversion if the tumour grows from the posterior wall, a retroversion if from the anterior, combined with lateral version corresponding to the insertion of the tumour. That a myoma has been the cause of such a displacement, has been proved in several cases of the sort under my own observation, for, after the removal of the tumour, the uterus resumed its normal position in the pelvis.

The result of an examination made in January, 1873, in the case of Ernestine K——, an unmarried woman of 30 years of age, is shown in fig. 21. She had for some years been subject to severe hæmorrhage which for the last twelve months had been constant.

The uterus was not only elevated and retroverted but was also displaced to the right side, and is shown in the figure, as projected on the median plane. It is scarcely increased in size, but the cervical portion is widely dilated, and the entire body

of the organ forms a prominence above the plane of the pelvic inlet, the fundus facing upwards. From a broad insertion on the anterior wall of the uterus and the upper part of the cervix, a large myoma extends through the dilated os tincæ into the vagina, and distends the walls of the latter on every side, as far down as the pelvic floor.

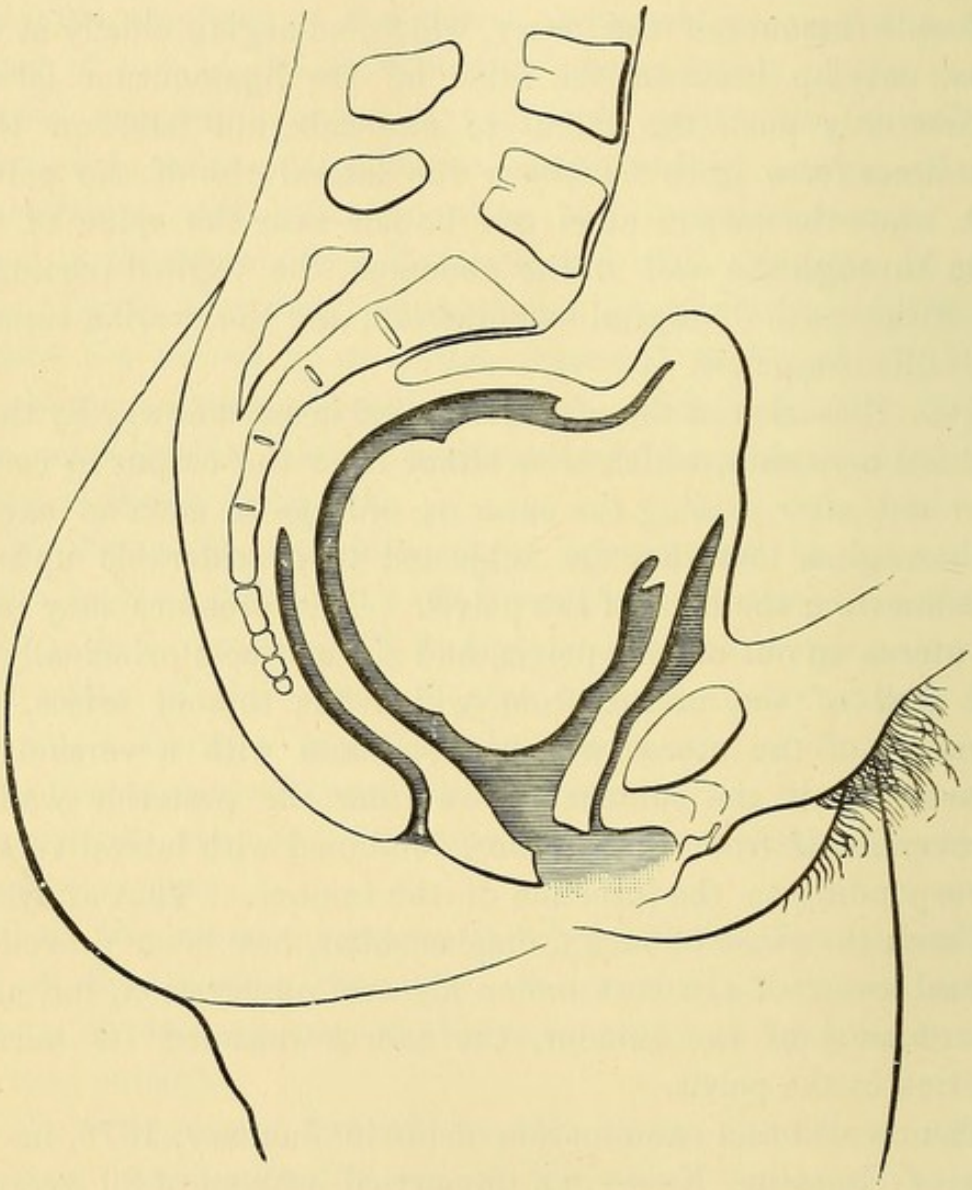


FIG. 21.—Myoma growing from the anterior wall of the uterus into the vagina, and causing elevation and retroversion.

When the tumour had been detached by the wire écraseur, and with great difficulty extracted through the vulva, the uterus returned to its normal position in which it still remained when occasionally examined in 1879.

§ 69. Hæmatokolpos, the accumulation of blood in a vagina

imperforate downwards, is the condition that causes the greatest degree of elevation of the uterus; an extreme case of this sort is represented in fig. 22.

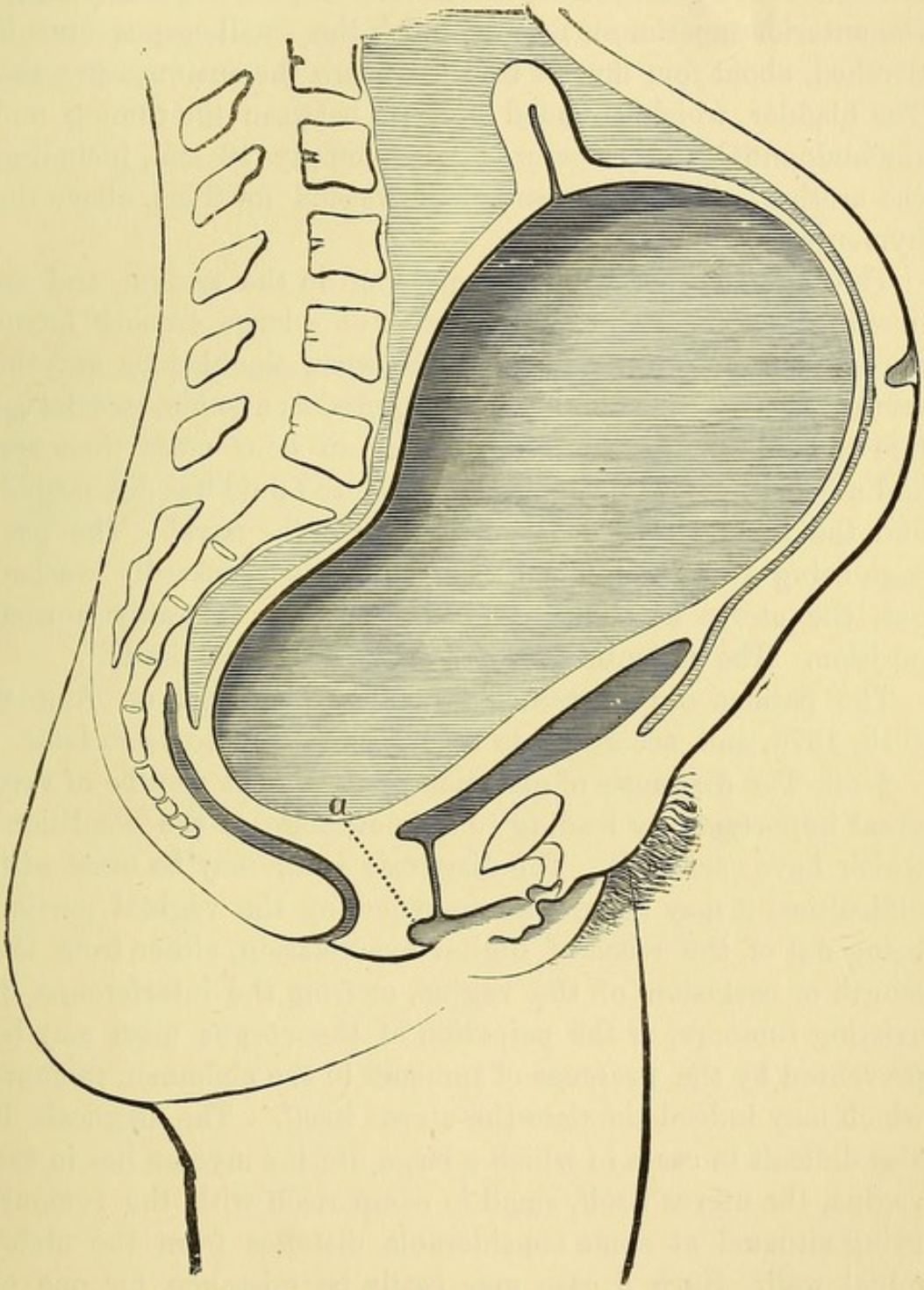


FIG. 22.—Elevation of the uterus from hæmatokolpos.

Anna S——, aged 14, epileptic and weak-minded since her seventh year had complained for nine months of sacral pains with periodical exacerbations; for the past fourteen days these

pains had been continuous and constantly growing worse. The condition found on the first examination on June 22nd, 1876, is depicted in fig. 22. The abdomen is filled nearly up to the costal arches by an elastic, indistinctly fluctuating tumour, on the anterior superior surface of which the small corpus uteri is perched, about four fingers breadth below the ensiform process. The bladder which extended high up between the tumour and the abdominal wall, measured when empty 13 cm., including the urethra. The lower part of the vagina for 3 cm. above the hymen was solid.

The tumour could be felt projecting in the rectum, and an opening was made into it by means of a large trochar introduced from the fossa navicularis between the bladder and the rectum, the finger in the latter being used as a guide, (see dotted line *a*, fig. 22). In three-quarters of an hour more than one and a half litres of thick chocolate-coloured fluid was discharged, and the fundus uteri descended as far as the navel. The passage being kept freely open, and the cavity repeatedly washed out, the uterus subsequently passed into a tolerably normal position. The epileptic attacks were greatly diminished.

The patient did not return after her discharge on August 20th, 1876, and, according to report, she died two years later.

§ 68. The diagnosis of elevation of the uterus may be of very great importance by leading to a knowledge of the conditions which have caused it. The diagnosis itself may be beset with difficulties, it may be greatly impeded by the vaginal portion being out of the reach of digital examination, either from the length or occlusion of the vagina, or from the interference of existing tumours, or the palpation of the corpus uteri may be prevented by the presence of tumours in the abdomen, tumours which may indeed simulate the uterus itself. The diagnosis is also difficult in cases in which a large uterine myoma lies in the vagina, the uterus itself, small in comparison with the tumour, being situated at some considerable distance from the abdominal wall. Such a case may easily be mistaken for one of inversion of the uterus. (Compare figures 21 and 112).

Combined palpation from the rectum or vagina, and abdomen in deep chloroform narcosis, half the hand being introduced if the fingers do not reach high enough, may reveal the presence

of the uterus above the tumour, as well as the nature, and perhaps also the mode of insertion, of the tumour itself.

The diagnosis of the condition is always necessary for the determination of the proper indications for treatment, even if that adopted in particular cases is prescribed not by the elevation of the uterus but by the suffering it entails.

SUMMARY.

Elevation of the uterus is the result, either of superior fixation when it is generally combined with other displacements, or of pressure on the organ upwards out of the pelvis. The latter form is illustrated by two cases in which the elevation was considerable and due, in the one, to a uterine myoma filling the vagina, in the other, to hæmatokolpos.

CHAPTER II.

ANTEPOSITION OF THE UTERUS.

§ 69. Large accumulations of fæces may press the uterus against the anterior wall of the pelvis, and anteposition so caused is, from the nature of the case, generally transitory. I have, however, seen several cases of cicatricial stenosis of the lower part of the rectum in which it was kept up until remedied by the artificial removal of the accumulated fæces.

Permanent and considerable anteposition may be caused in just the same way by tumours of the rectum, which, according to their insertion and mode of development, may at the same time dislocate the uterus upwards or more rarely downwards. Figure 23 is an illustration of such a case.

Mrs. Louise K., aged 58, consulted me July 20th, 1877. There was a soft tumour which bled easily, growing from the anterior wall of the rectum, about the level of Douglas' pouch; anteposition and elevation of the uterus. Nothing was reported of the further course of the case.

I have found the uterus forced against the anterior wall of the pelvis and abdomen, in quite a similar way, by solid tumours lying behind the rectum and having broad insertions into the sacrum. A case of anteposition of the uterus with elevation, due to an anterior sacral meningocele in a patient in Spiegelberg's Clinic, is reported by Kroner and Marchand.*

§ 70. Tumours situated in Douglas' pouch are more common causes of anteposition of the uterus. The extra-uterine development of an ovum in that place, an encapsuled peritoneal exudation, an ovarian tumour not yet too large to find room in the true pelvis or prevented from rising completely out of it by peritoneal adhesions, or even a tumour growing from the posterior wall of the uterus itself, may press the organ towards the anterior pelvic wall.

Breisky† has published an illustrated report of a singular

* *Archiv. f. Gynäkol.*, Bd. xvii., S 444.

† Breisky, Die Krankheiten der Vagina (Billroth, *Handbuch der Frauenkrankheiten*), S 71.

case of anteposition of the uterus caused by the intrusion of a mass of intestinal loops into Douglas' pouch.

Hæmatocele retro-uterina is perhaps the tumour in Douglas'

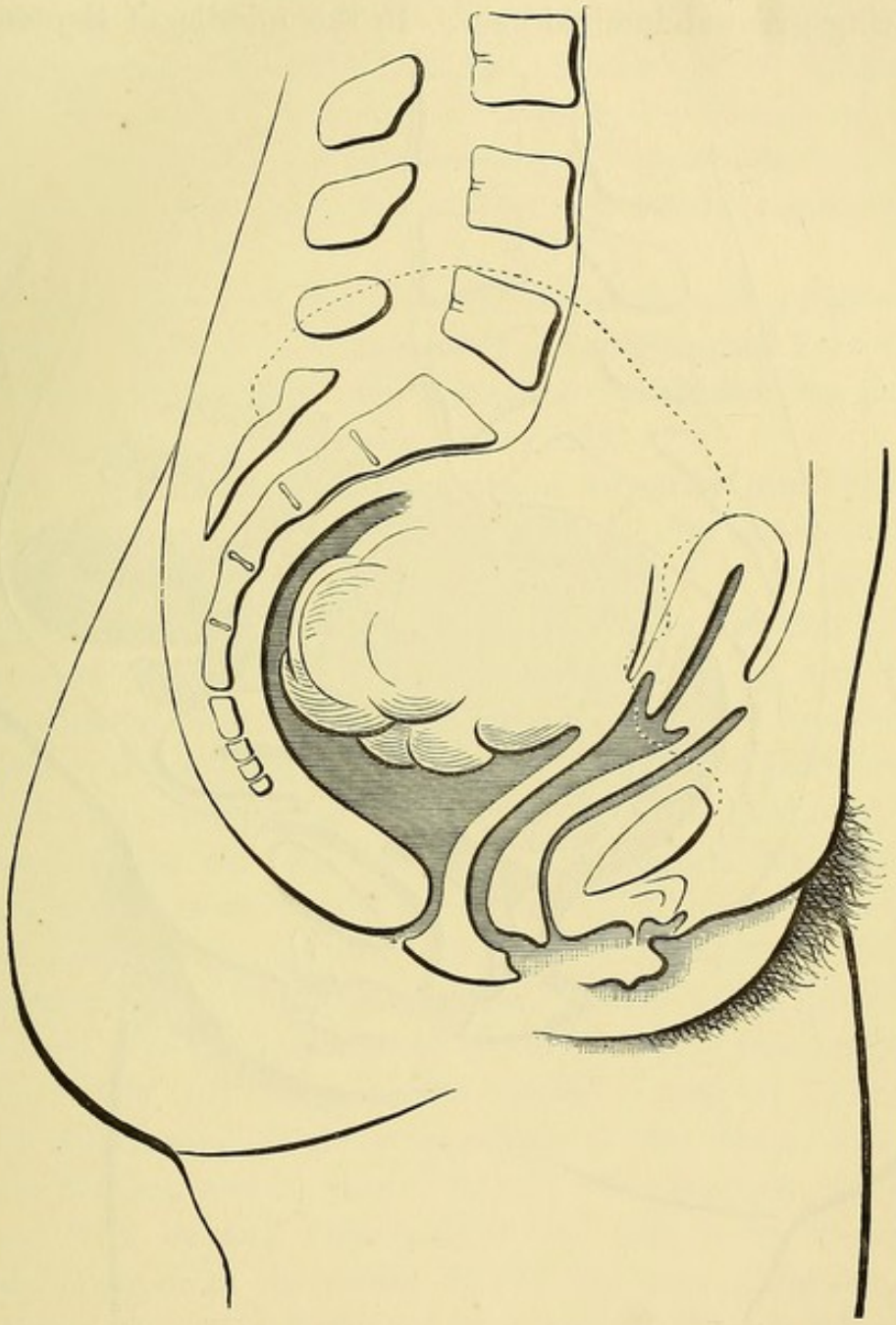


Fig. 23.—Anteposition and elevation of the uterus due to a tumour of the anterior wall of the rectum.

pouch that more frequently than any other causes anteposition of the uterus. Figure 24 represents such a case.

Mrs. K., a married woman, aged 25 years, had had one abortion between two labours at term : her catamenia appearing

at most irregular intervals were generally very profuse and protracted. In the beginning of August, 1876, soon after menstruating, while working hard in the field, she swooned away had to be carried home, and was ill in bed for three weeks, suffering great abdominal pain. In the middle of September,

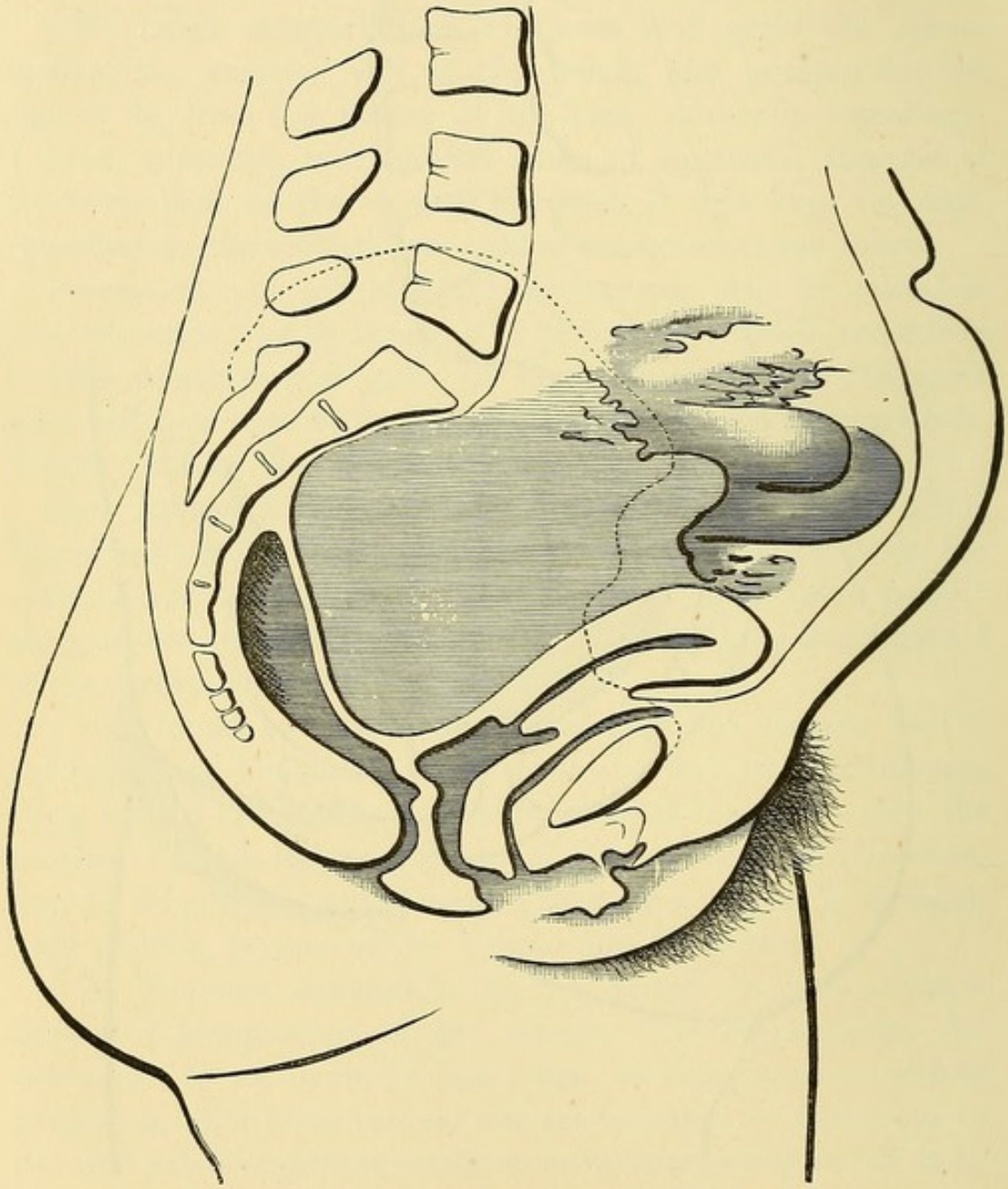


Fig. 24.—Hæmatocele retro-uterina, causing anteposition.

again during hard work, she had another attack of fainting, followed by illness in bed. As she grew no better she applied for admission to the Clinic. (Figure 24 represents the result of examination on October 20th, 1876).

§ 71. Anteposition is not always caused by the uterus being

pushed towards the anterior pelvic wall from behind; in some cases the uterus is drawn forwards by contraction of the connective tissue surrounding it and the bladder. We may see this contraction take place in those comparatively rare cases of anterior parametritis, in which the inflammation extends forwards alongside of the bladder to the anterior wall of the pelvis. If the inflammation, and consequently the contraction is confined to one side, the anteposition cannot be directly forwards, the uterus will undergo some torsion and lateral displacement as well.

Moreover, when contusions in labour lead to such gangrenous destruction of tissue as to cause utero-vesico-vaginal fistula, we may afterwards see that the cicatricial contraction has drawn the uterus towards the anterior pelvic wall.

When any tumour presses the uterus forwards from behind, the anteposition is maintained as long as the tumour exists, or until the uterus, if freely movable, rises out of the true pelvis, but if the anteposition is due to the contraction of the cicatrices of parametritis, if the corpus uteri is in no way fixed by co-existing peritonitis, and if the uterus itself is normally flexible, its shape is very soon altered into decided retroflexion. The principal cause of this is to be found in the unaltered normal condition of the attachments of the fundus uteri, and in the action of intra-abdominal pressure which when the cervix is fixed further forwards than the position in which the fundus is maintained by the upper margin of the broad ligaments, necessarily falls on that wall of the organ that was originally anterior. We shall return to this subject in Chapter VIII.

§ 72. *Diagnosis.*—If the anteposition of the uterus is due to anterior fixation, and is uncomplicated, the diagnosis is not interfered with by any difficulties in the way of the fingers on the abdomen or in the vagina in the bimanual palpation. If the uterus is pressed forwards by a tumour, the matter is far more difficult, because not only the displaced uterus, but the tumour also, must be recognised, and each interferes with the palpation of the other.

Whether there are any symptoms of incarceration or not, distension of the rectum and bladder will impede the diagnosis. If any sort of inflammatory process is going on in the pelvis

which either mechanically interferes with or inhibits thorough palpation of the parts, though the anteposition of the cervix may indeed be at once perceptible upon digital examination per vaginam unless the uterus is also much elevated, the tumour behind the cervix may be mistaken for the enlarged retroflected corpus uteri. How fatal such an error may be is evident from the great difference in the indications given in the two cases, viz., retro-uterine tumour, and enlarged and retroflected uterus. Attempts to replace an hæmatocele, or an ovum in course of development in Douglas' pouch in a case of extra-uterine fœtation, under the impression that the tumour was a retroflected uterus, have already caused several sudden deaths. By perfectly gentle bimanual palpation after the bladder has been completely emptied, we may often make out the corpus uteri lying in front of the tumour as in figure 24, or where no suspicion of pregnancy stands in the way, we may ascertain the direction of the cavity of the uterus by passing a sound. Once the anteposition of the uterus is recognized, that fact itself throws more light on the nature of the retro-uterine tumour and, *vice versâ*, any well founded surmises as to the nature of the tumour will help us to discover the position of the uterus.

The form, consistence, and degree of mobility of the retro-uterine tumour, the history of the patient, and the symptoms present at the time, will often help us, but a certain number of cases must for some time remain doubtful, further observation of the patient, perhaps after some complication in the form of peritonitis to which the more severe symptoms may be due has passed away, may alone render possible the diagnosis of the anteposition and its causes. Important as it is for the physician to obtain an exact diagnosis by palpation of the pelvic organs, under some circumstances it may be just as important to postpone doing anything that is useless in regard to the immediate indications for treatment.

§ 73. *Course.*—On the contraction of the extravasation of a hæmatocele, or of a peritoneal exudation, which has given rise to anteposition, the uterus passes immediately into decided retroposition, with simultaneous or subsequent anteflexion. If complete resorption takes place, the uterus may regain its normal mobility. In cases in which the uterus had been pushed

forwards by ovarian tumours, which afterwards rose into the abdomen with symptoms of peritonitis, I have seen the uterus fall back into the retroversion in which it had previously lain. The anteposition existing in cases of vesico-vaginal fistula is generally caused by such firm cicatrices, that even after the fistula has been healed by operation, it and with it the retroflexion are generally permanent. Under proper care the anteposition, due to an acute anterior parametritis, in most cases disappears completely soon after the inflammation; when it is due to the results of puerperal inflammation, long passed away, we find that the anterior fixation of the cervix, even where it has been in the process of time greatly extended, forms a most obstinate impediment to reposition of the retroflected uterus, or to the maintenance of the normal position if the reposition has been effected.

§ 74. *The prognosis* of anteposition is contained in what has just been said. In regard to *treatment* it need only be mentioned, that where it depends upon inflammation, or cicatrices in the parametrium, the treatment must be one to promote, as far as possible, the resorption of all exudations.

The cicatrices due to gangrenous destruction of tissue are no fit objects for any treatment aiming at their resorption or softening; and only under the most exceptionally favourable circumstances is there any prospect of benefit from their mechanical extension. The separation of the cicatrices by operation has not up to the present time been undertaken with the view of correcting the position of the uterus, but in order to facilitate the closure of the vesical fistula.

If the anteposition is due to tumours lying behind the uterus, the treatment is that indicated by the tumours.

SUMMARY.

Anteposition of the uterus is caused by tumours of the rectum or sacrum, by tumours situated in Douglas' pouch (extra-uterine pregnancy, ovarian tumours, hæmatocele), or by cicatrices which fix the uterus forwards. The tumours in Douglas' pouch may easily lead to its being mistaken for retroflexion of the uterus.

CHAPTER III.

RETROPOSITION OF THE UTERUS.

§ 75. Great distension of the bladder may force the uterus into decided retroposition (compare figures 7 and 8), but permanent retroposition can only be caused by tumours which press on the uterus in front or by cicatrices or adhesions which fix it behind. While anteposition is more frequently caused by pressure from behind, retroposition is generally due to posterior fixation. The conditions behind the uterus are much more favourable than those in front of it, not only for the development of tumours, but also for the occurrence of inflammation of the parametrium or peritoneum.

The tumours which push the uterus backwards are either tumours of the bladder, tumours lying between the bladder and the uterus, or tumours of the anterior wall of the pelvis. Ovarian tumours from the mode of their origin and early development generally lie on the posterior surface of the uterus, and as was mentioned in the section on general pathology, the frequent coexistence of retroversion with these tumours does not arise from the tumour pressing the uterus backwards, but from the retroversion existing before the development of the tumour. As therefore when the fundus of the uterus does lie behind an ovarian tumour, the displacement should very often be more properly called retroposition than retroversion, such cases must be mentioned here. The reason that when the uterus lies underneath a large ovarian tumour it is more frequently in retroposition than in the retroflexion or retroversion it previously occupied, is the ovarian tumour itself, first because when the tumour has risen above the pelvis the ovarian ligament keeps the fundus uteri in a higher position than it may previously have sunk into, and secondly because the tumour prevents the crown of the bladder from rising out of the pelvis, so that even such moderate distension of the bladder as exists the greater part of the day, causes a degree of retroposition that otherwise could only arise from very great distension indeed (*vide* fig. 8).

This is illustrated in figure 25, which shows the result of an examination of a Mrs. B., of B., on the January 25th, 1873, the tumour of the left ovary was extirpated on February 7th.

Though the uterus of this woman lay in anteposition at the time of her discharge, this fact has no connection with the etio-

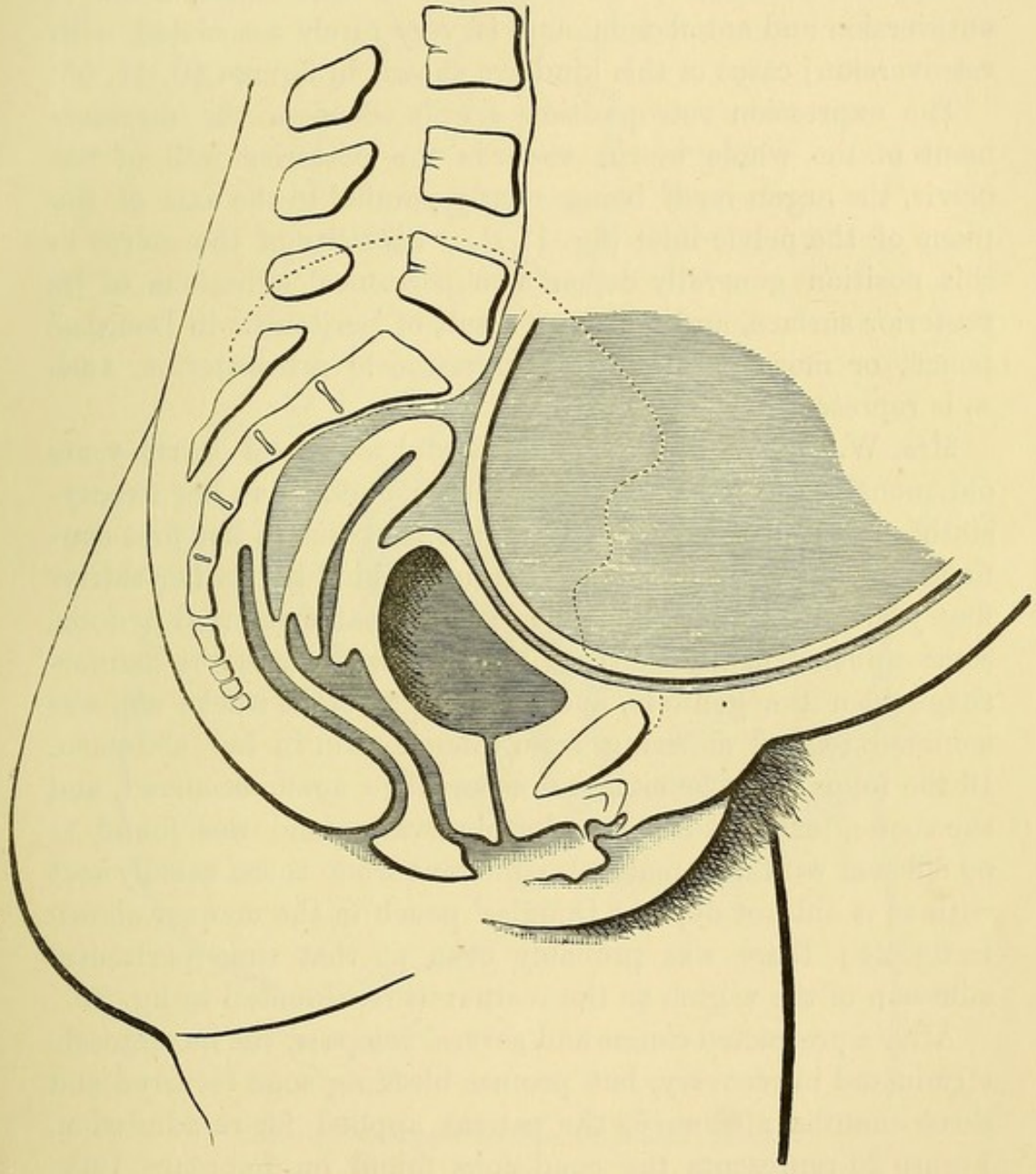


FIG. 25.—Retroposition caused by an ovarian tumour.

logical significance of the pre-existing retroposition, for the pedicle of the tumour had been retained in the clamp and had adhered to the abdominal wound. According to my experience, when after the removal of the tumour the pedicle is returned

into the pelvis, any uterus which has previously lain underneath the tumour in retroversion or retroposition, reverts into retroversion or retroflexion.

§ 76. Shrinking of the folds of Douglas, the normal posterior attachments of the uterus, principally affects the cervix uteri, retroposition therefore, when it is due to this cause, leads to anteversion and anteflexion and is very rarely associated with retroversion; cases of this kind are shown in figures 40, 47, 56.

The expression retroposition simply denotes the displacement of the whole uterus towards the posterior wall of the pelvis, the organ itself being nearly parallel to the axis of the plane of the pelvic inlet (fig. 17 *r*). Stability of the uterus in this position generally depends on peritoneal adhesions of its posterior surface, and may be a result of peritonitis in Douglas' pouch, or more frequently of hæmatocele retro-uterina, such as is represented in figure 26.

Mrs. W., of St., a large and powerful woman of thirty years old, menstruated since she was nineteen, childbed in her twenty-sixth and twenty-seventh years; parametritis in her first confinement left a voluminous exudation behind it. In her thirty-first year ten days after one of her normal menstrual periods, some unusual bodily exertion was followed by severe hæmorrhage from the genitals, and for the next eight weeks she was confined to bed suffering from intense pain in her abdomen. In the following year violent hæmorrhage again occurred, and she soon afterwards came under observation and was found to be affected with a hæmatocele, different from those usually met with as it did not depress Douglas' pouch in the manner shown in fig. 24; there was probably even at that time peritoneal adhesion of the vagina to the rectum as represented in fig. 26.

After a protracted course and several relapses, the hæmatocele terminated in recovery, but profuse bleeding soon recurred and three months afterwards the patient applied for re-admission. Figure 26 represents the conditions found on February 12th, 1874. The uterus enlarged, with very thick walls and inflexible, was immovably fixed high up in the back of the pelvis. The cohering and thickened peritoneum of Douglas' pouch could be felt between the posterior vaginal vault and the rectum, and the adhesion of the uterus to the latter extended

obliquely upwards as far as the promontory. As is almost always the case in superior posterior fixation of the uterus the ampulla recti was permanently distended, even when it contained no fæces. The conditions were about the same when

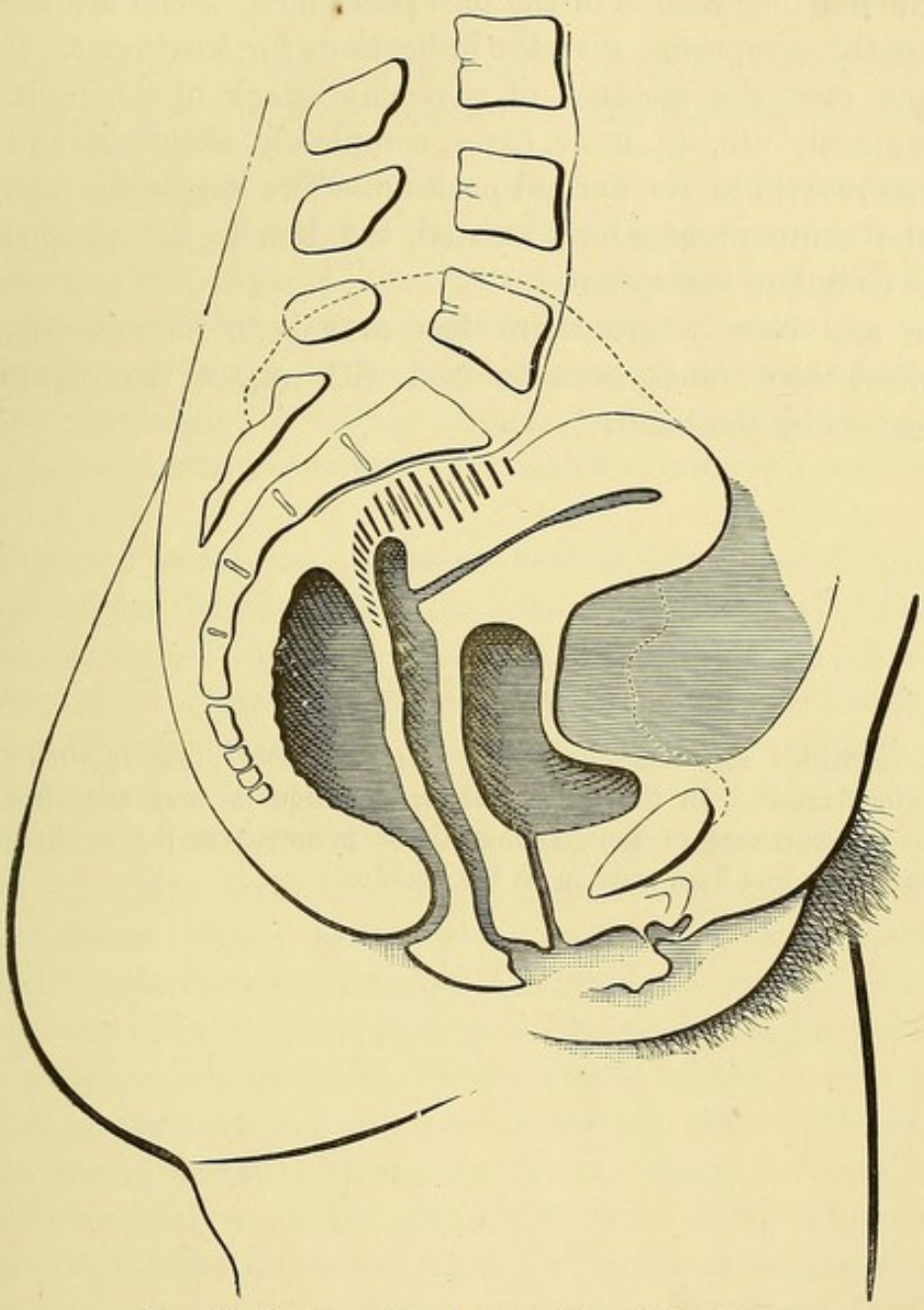


Fig. 26.—Retroposition from peritoneal adhesions.

the patient was seen four years later, again on account of uterine hæmorrhage.

§ 77. The symptoms associated with fixation of the uterus in retroposition are often important. They depend upon traction of the peritoneum, upon the frequently recurring attacks

of parametritis and perimetritis, and sometimes upon the stenosis of the rectum caused by the residues of the exudation which fix the uterus. The vesical troubles associated with this displacement are no doubt partly due to mechanical causes.

The existing results of the past peritonitis, which are the origin of the symptoms, give the indications for treatment. Under proper care the residues of a recent attack of peritonitis or hæmatocele are, in most cases, completely absorbed, and the uterus reverts to its normal position. The longer the residues of the acute process have existed, the less is the prospect of their complete resorption.

In any case where there has ever been hæmatocele, the greatest care must be exercised with regard to separating adhesions by the hand.

SUMMARY.

Retroposition, sometimes caused by anterior pressure, is more often due to posterior fixation. In the latter case serious troubles may arise from the frequent recurrence of the parametritis or perimetritis, the origin of the displacement, and from traction on the bladder.

CHAPTER IV.

DISPLACEMENT OF THE UTERUS OUT OF THE MEDIAN PLANE. LATERAL POSITION, DEXTROPOSITION AND SINISTROPOSITION.

§ 78. *Etiology.*—With the exception of the fundus and vaginal portion, the uterus is attached along the whole of its right and left edges to the connective tissue of the broad ligaments. A symmetrical dislocation of the entire organ forwards may be caused by these ligaments alone, and while a tumour originating from one of them pushes the uterus towards the opposite side, contraction in either draws it towards the affected side.

With the exceptions of those rare tumours which are developed from the hilus outwards between the folds of the broad ligament, and of those likewise rare myomata which grow out of one side of the uterus, all tumours which dislocate the uterus, simply to one side, are essentially inflammatory. In most cases it is puerperal parametritis in the stage of exudation which pushes the uterus to the one side of the pelvis; after resorption has taken place, cicatricial contraction occurs in the tissue of the parametrium and results in a displacement towards the opposite side. Figures 27 and 28 are diagrammatic illustrations of this, (*u*) is the puerperal uterus which has been pushed towards the right side of the pelvis by an extensive parametric exudation on the left side. The exudation extends upwards above the fundus uteri, it forces down the left vaginal vault and thrusts the left fold of Douglas (*d*) across the median line to the right; (*u'*) is the same uterus, after puerperal involution, and the contraction of the voluminous exudation into short stringy cicatrices which have fastened the uterus to the left side of the back part of the pelvis in sinistroposition dextrotorsion and anteflexion. The vaginal vault has been dragged out of position to the left along with the uterus, and the fold of Douglas (*d*) is now inserted quite close to the left sacro-iliac synchondrosis.

Attacks of acute and chronic parametritis are not uncommon apart from the puerperal state, and though as a rule the exudation in them is not considerable, they are followed by long-lasting cicatricial retraction of the parts affected. In some of these chronic cases there seems to be from the very commencement an atrophy of the tissue affected ("parametritis atrophicans" of Freund). At all events we far more frequently find the uterus displaced towards the side affected than towards the opposite one, and this cannot be merely because the state of cicatricial contraction lasts much longer than that of inflammatory swelling, there may be in some cases no inflam-

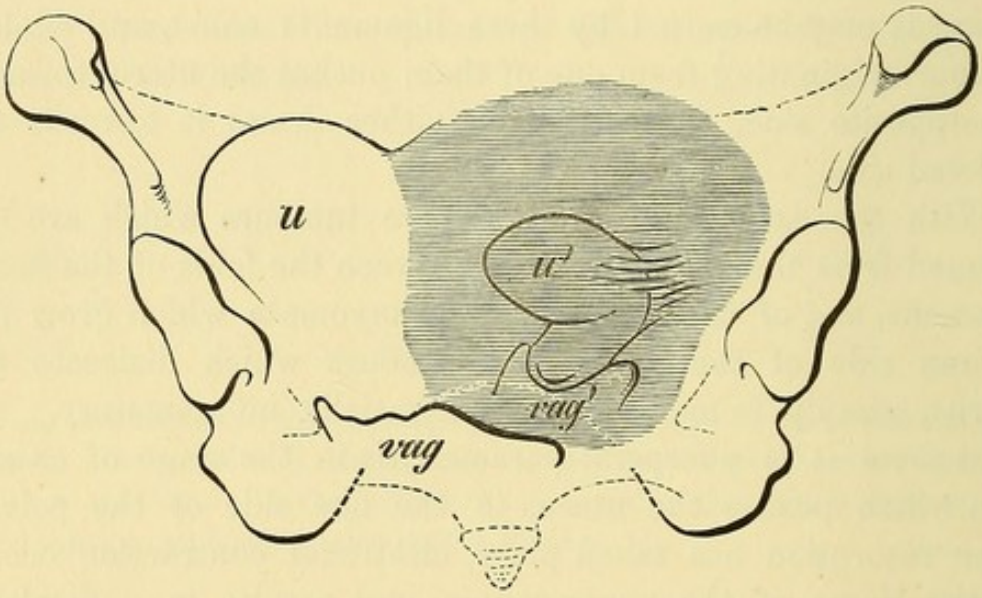


FIG. 27.—Diagram of lateral displacement of the uterus, (*u*) before (*u'*) after cicatricial contraction of an exudation caused by parametritis.

matory swelling at all, and it is often too insignificant to displace the uterus in any way.

It must be mentioned that the vaginal portion lies normally rather to the left side of the pelvis, and that an anomalous lateral position of the uterus is sometimes caused by one broad ligament being originally shorter than the other.

§ 79. *Diagnosis.*—When the lateral displacement caused by an exudation is of a considerable extent, such for example, as that represented in fig. 27, it is not hard to recognise on digital examination per vaginam. We are at once struck by the displacement of the vaginal portion simply to one side, without any such displacement backwards or turning of the os uteri for-

wards, as is found in cases of retroposition associated with anteflexion, in which also the uterus is seldom in the median plane. Even when the parametritis has caused a large tumour, the fundus uteri pushed over to the same side as the vaginal portion, can generally be felt by the other hand through the abdominal walls, and even if this cannot be done, there can be no doubt as to the position of the uterus, as the nature of the tumour is known from the vaginal examination. If in such a case more objective proof is wanted, the use of the sound will afford it. But as was said about antepositions, any acute inflammation, which causes displacement of the uterus, as long as it exists

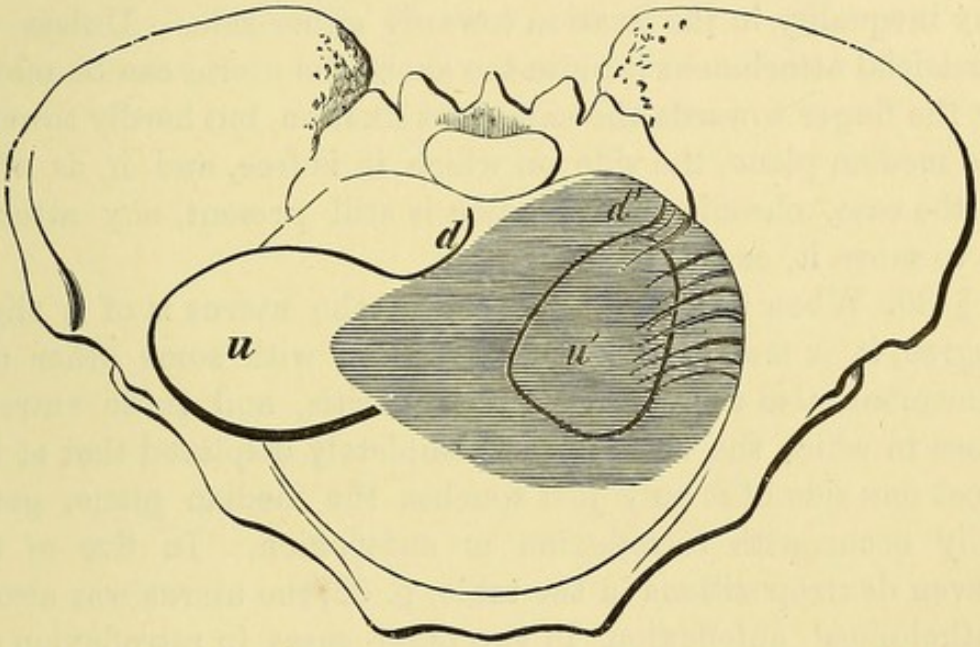


FIG. 28.—Lateral displacement represented in fig. 27, seen perpendicular to the plan of the pelvic inlet.

gives us itself the proper indications for treatment, and may sometimes compel us to abstain, in the first instance, from any exact diagnosis as to the nature of the displacement.

If the lateral position is caused by non-inflammatory tumours, the diagnosis may be difficult, especially if the displacement is complicated by much elevation, and the size of the tumour interferes with palpation. In such cases, though the influence of the displacement on the health of the patient be quite subordinate to that of the tumour, its nature may be of material importance in the diagnosis of the tumour and its attachments, and therefore for the prognosis and indications for treatment.

The lateral displacement of the entire uterus is characteristic of those ovarian tumours, which arise from wide bases between the folds of peritoneum of the broad ligament, which sometimes develop extensively behind the peritoneum in various directions, and may force the uterus up completely above the pelvis.

Decided lateral position caused by cicatricial contraction of one of the broad ligaments seldom escapes notice on bimanual examination; if the displacement is so slight as to be doubtful, the question can generally be settled by changing the hands, using the external one for vaginal examination and *vice versâ*.

Independent of the position of the uterus in the pelvis, the testing of its passive mobility is important, in order to detect any inequality in the fixation towards either side. Unless the cicatricial attachment is quite too short, the uterus can be moved by the finger towards the side of its fixation, but hardly towards the median plane, the side on which it is free, and if, as often is the case, chronic inflammation is still present, any attempt so to move it, causes pain.

§ 80. When the lateral position of the uterus is of a slight degree, it is most commonly connected with some other displacement, also the result of parametritis, and those extreme cases in which the uterus is so completely displaced that at the most one side of it only just touches the median plane, generally occur with retroflexion or anteflexion. In five of the eleven dextropositions in the table, p. 62, the uterus was also in pathological anteflexion, in two other cases in retroflexion; it was anteflected in eight of the twenty-two sinistropositions and retroflected in seven.

The recognition of the lateral fixations of the uterus caused by parametritic cicatrices is of practical value, not only that an exact diagnosis may aid us in our estimate of the further course of the case and the possible effects of treatment, but because when any mechanical treatment is indicated, particularly when a pessary has to be shaped to suit a retroflected uterus, it is of the greatest importance to have a knowledge of any such lateral fixation.

In other respects the indications in cases of lateral position of the uterus are given by the inflammation and cicatrices in the parametrium.

SUMMARY.

Lateral position is brought about by tumours or contractions in the parametrium, which themselves are most commonly the effects of parametritis. High degrees of lateral position are generally combined with stabile anteflexion or retroflexion.

CHAPTER V.

LATERAL VERSION AND LATERAL FLEXION OF THE UTERUS.

§ 81. The cicatricial contraction resulting from an acute attack of parametritis is very seldom uniform throughout the height of the broad ligament affected, and chronic parametritis is nearly always limited in extent. Retraction of part of one ligament towards the side of the pelvis, happening in this way, is the cause of lateral version of the uterus. This partial contraction in the parametric tissue occurs most frequently at the level of the cervix uteri, and when the cervix is drawn to the left, causes dextroversion of the uterus, and *vice versâ*.

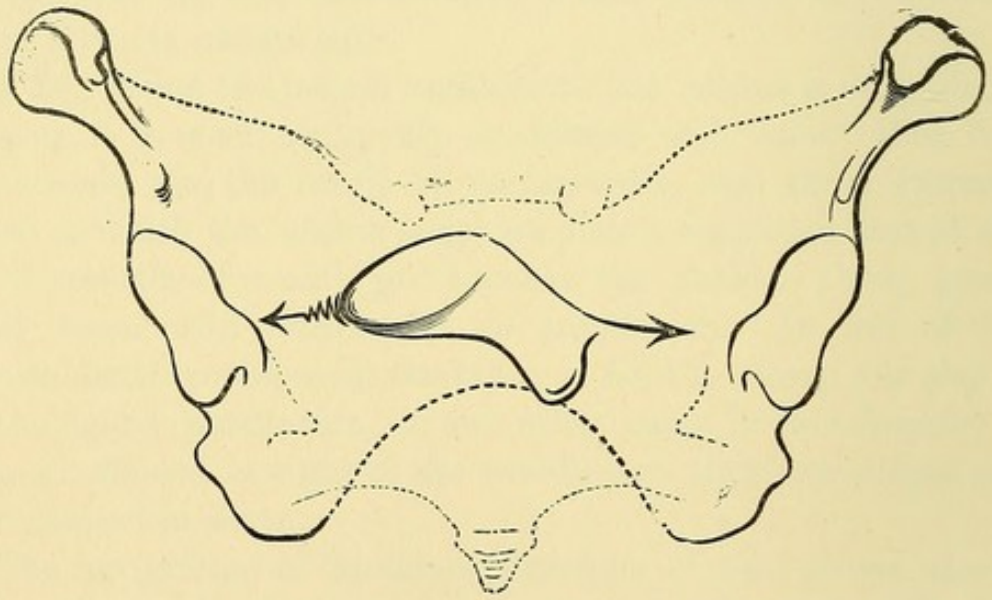


FIG. 29.—Diagram of lateral version of the uterus due to contractions of different parts of the ligamenta lata.

When as more rarely happens the contraction takes place in the upper part of the broad ligament, the uterus is drawn to the affected side.

Lateral version of the most extreme degree is caused by a combination of different contractions, for example, by shortening of the upper part of the right broad ligament, and of the lower part of the left as represented in the diagram, (Fig. 29).

By repeated attacks of parametritis a uterus already displaced by earlier cicatrices, may in exceptional cases, especially if detached portions of the tissue of the parametrium, perhaps even of its own substance, have been totally destroyed by suppuration, and replaced by contracted cicatrices, ultimately come to lie quite transversely, the os at one side and the fundus at the other.

It is such attacks of complicated parametritis and localized metritis that lead to the development in quite exceptional cases of distortion of the uterus, or to the very rare flexions of the organ over one of its lateral edges.

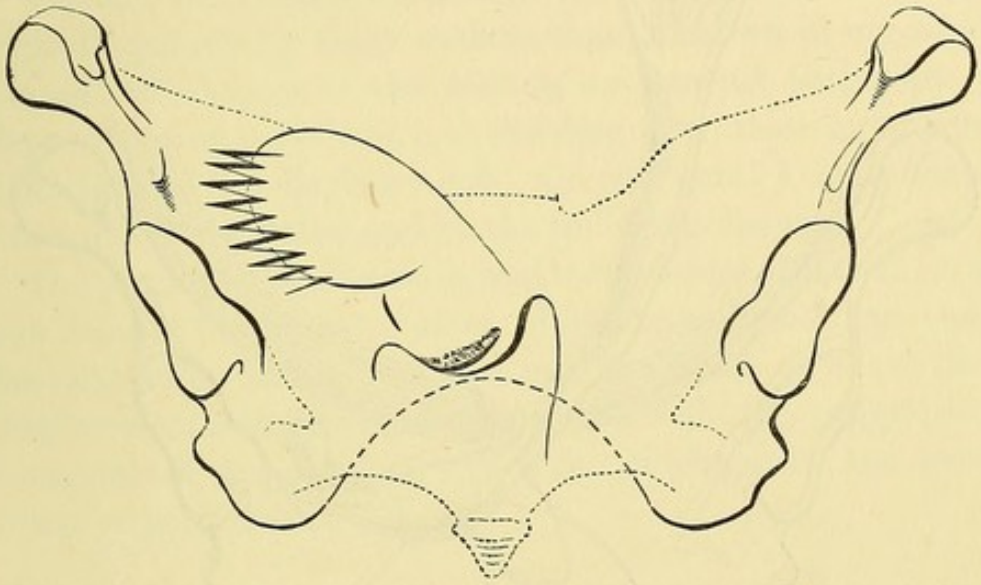


FIG. 30.—Lateral version and torsion resulting from puerperal peritonitis.

It need hardly be said that lateral version, lateral flexion, and distortion of the uterus may depend on original errors in development.

§ 82. One of the manifold combinations of lateral version and lateral flexion may be particularly mentioned, as a not very uncommon condition after childbed. The course of acute puerperal parametritis is generally complicated by local attacks of peritonitis, the contracting exudation of which may result in adhesions binding the uterus to one of the iliac bones in such a way that, after the inflammatory processes have passed away, it remains in lateral version, frequently combined with, lateral position and elevation, or torsion.

An exceptional case of torsion from peritoneal fixation of the corpus uteri is represented in figure 30. Mrs. K. of J., a

woman 38 years of age, who had had repeated abortions followed by acute and subacute attacks of peritonitis, as the result of which the uterus was in a condition of very imperfect involution, and was, when she was examined on August 2nd, 1872, in the position shown in the figure.

In 1874 she conceived, and during her pregnancy, which lasted the full time, the growth of the uterus loosened the peritoneal adhesions, though not without much suffering on her part. After a normal childbed the uterus resumed its normal position.

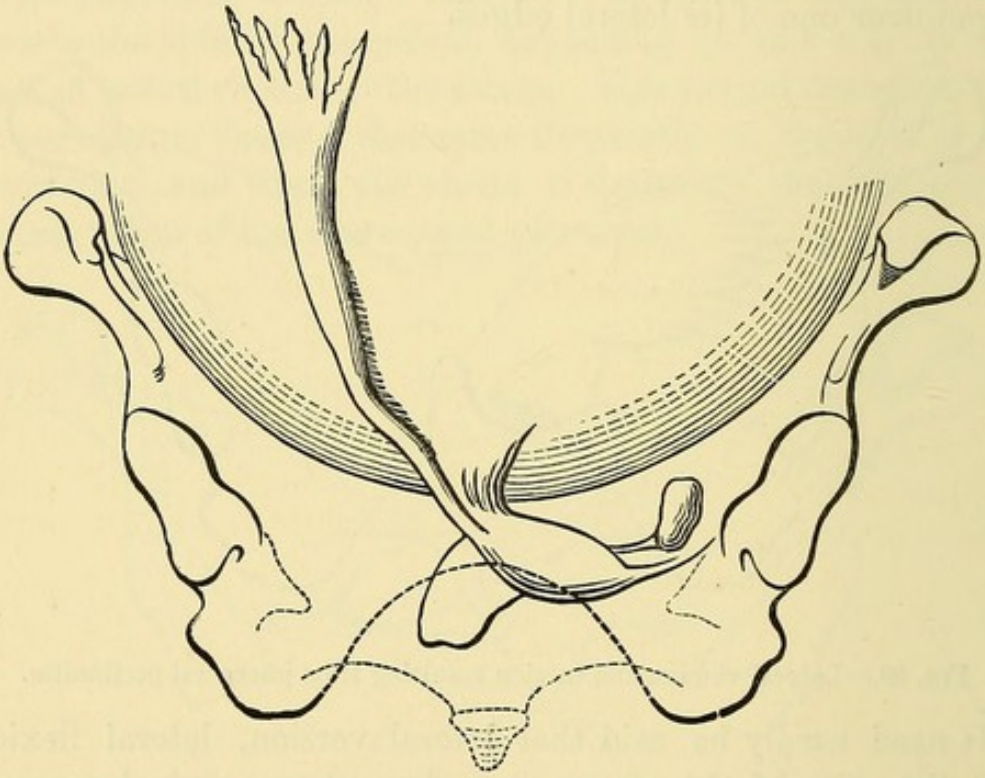


FIG. 31.—Diagram of the displacement of the uterus usually found with an uncomplicated ovarian tumour.

§ 83. Ovarian tumours must also be mentioned as often giving rise to a high degree of lateral version. If during the early development of an ovarian tumour, the uterus is in its normal position and is freely movable, the tumour if not adherent rises without hindrance above the pelvis. If its growth is tolerably symmetrical the point of its origin and attachment is drawn by the increasing tension, from its original position at one side of the pelvis, more and more towards the median plane. Lateral version, from the traction of the tumour on the ovarian ligament of the affected side, is the only displace-

ment imparted to the uterus under such circumstances, and this displacement disappears on the removal of the tumour.

Figure 31 represents the condition found by palpation in the case of Laura B., from W. According to the report of the laparotomy the tube was attached to the tumour as shown in the figure.

§ 84. *Diagnosis.*—In regard to the diagnosis of lateral versions and flexions it is hardly necessary to add anything to what has been said in the last chapter, about that of lateral positions. It depends more upon careful and accurate bimanual palpation than upon anything else.

The fact that lateral flexions in particular are recorded much more frequently by many authors than is shown in my table in the second chapter of the section on general pathology, may depend less on a difference in the diagnosis, than on one in the definition, of the displacement. On this point I must refer to what was there stated and to the following chapter.

The prognosis, indications, and therapeutics of lateral versions and flexions are, in some cases, of less importance than the deductions to be drawn from the tumours which give rise to the displacements, in others, they coincide with the prognosis and treatment of parametritis, and of the cicatrices in the parametrium or peritoneum.

SUMMARY.

Lateral version and lateral flexion may be due to causes similar to those of lateral position, to adhesion caused by peritonitis, or to ovarian tumours.

CHAPTER VI.

TORSION OF THE UTERUS.

§ 85. *Definition.*—In the first chapter of the section on general pathology it was mentioned that the normal position of the uterus is not exactly median, that the anterior surface of the uterus facing the bladder does not look exactly forwards, but rather forwards and to the right, and that when the bladder is empty the vaginal portion lies rather to the left, and the fundus uteri rather to the right of the median plane, as is represented in figure 11. The variation in the amount of this displacement of the uterus from the median plane, is considerable, within perfectly normal limits, and under the influence of pathological processes becomes much greater. Considered as movements, these displacements answer to the word of command, "right" or "left about face," and since the expressions version, flexion, and position as applied to the uterus, have already other meanings of their own, they have been appropriately termed rotation or torsion of the uterus, dextrotorsion when the anterior surface is turned to the right and sinistrotorsion when it is turned to the left. I find the expressions used in the same sense by Klob* and by G. Veit.†

This displacement of the uterus from the median plane, which often accompanies anteflexion and retroflexion, has nothing in common with those which we describe as dextro- and sinistroversion and as dextro- and sinistroflexion. It does not at all consist in any inclination or flexion of the uterus over one of its lateral edges, but in the circumstance that co-existing with the version or flexion of the uterus over its anterior or posterior surface, there has been a rotation of the organ as a whole.

What has just been said indicates that torsion though a common complication of other displacements of the uterus, most particularly of ante- and retroversions and flexions, does

* Klob. *Pathologische Anatomie der weiblichen Sexualorgane*, Wien, 1864, S. 80.

† G. Veit. *Handbuch der Spec. Path. u. Ther.* von Virchow, *Krankheiten der weiblichen Geschlechtsorgane*, II. Aufl., Erlangen, 1867, S 312.

not exist as an isolated displacement. We must, however, devote a separate discussion to the torsions of the uterus in order to understand the most common forms of anteflexion, and to appreciate properly what is often an important obstacle to the reposition of a retroflexion.

§ 86. *Etiology.*—At the level of the supra-vaginal part of the cervix the uterus is surrounded by a very thick layer of connective tissue, interrupted only by the bladder in front and by Douglas' pouch behind, and extending on every side as far as the wall of the pelvis.

It is in this connective tissue, between the upper part of the cervix and the pelvic wall, that parametritis, whether acute or chronic, generally takes place, and the contraction of this tissue resulting from or accompanying such parametritis, drags the uterus, more especially the upper part of the cervix, towards the pelvic wall in the direction most affected.

As this connective tissue is interrupted in front by the bladder and behind by Douglas' pouch, no cicatrix in the parametrium passing directly forwards or directly backwards, can connect the uterus with the pelvic wall. Fixation of the uterus depending on parametritis, unless by chance it depends on perfectly symmetrical contractions in the right and left sides of the pelvis, in drawing the uterus forwards or backwards, must always at the same time displace it from its median position.

If the inflammation and subsequent contraction has affected the whole extent of one broad ligament, it displaces the uterus, *in toto*, in a direction perpendicular to the median plane, into lateral position. If, as is more frequently the case, the retraction of the parametric connective tissue takes place exclusively, or to a far greater extent, at the level of the internal os, the upper segments of the broad ligaments unaffected by the parametritis or cicatricial contraction, will continue to keep the fundus uteri as nearly as possible in a median position. That it is a very rare accident for the traction of these local cicatrices in the parametric connective tissue upon the uterus, to be directly perpendicular to the median plane, is proved by the rarity of uncomplicated lateral version or flexion. The lateral tension of the cicatrix is generally more or less diagonal, and

more often backwards than forwards. The contraction in the fold of Douglas, which is generally greatest at the posterior free margin of the broad ligament, brings the insertions of this fold nearer to each other. Now the folds of Douglas are inserted into the pelvis near the sacro-iliac synchondrosis, about the level of the second sacral vertebra, and into the posterior surface of the uterus, a little below the level of the inner os. The contraction will therefore approximate these insertions, and the upper part of the cervix will be displaced backwards and upwards, and also to one side. It is the displacement of the cervix in this way to one side, that results in the torsion of the whole uterus, the fundus uteri and the vaginal part being kept as nearly as possible in the median position, the former by its peritoneal, and the latter by its vaginal attachments.

Torsion of the uterus so caused cannot take place without involving some loss of the normal capability of rotation, and therefore some pathological fixation of the uterus in torsion. As the cervix is drawn higher up in the pelvis while the normal connections of the fundus are unaltered, the anteflexion of the uterus takes place exactly over its previously anterior surface. The approximately diagonal position of the corpus uteri is only an expression of the torsion, and is not, as it may seem to be, lateral flexion.

§ 87. The direction in which the contraction in the fold of Douglas draws the uterus, and the way in which, as the lateral displacement and retroposition increase, the torsion increases also, are shown in the diagram in figure 32; *a* is a transverse section of the uterus at the level of the insertion of the folds of Douglas, *r* and *l* mark their free edges right and left. Moderate contraction of the right fold draws the uterus from *a* towards *b*, causing at the same time torsion to the extent shown by the position of the line *b*, compared with that of the line drawn in the transverse section of the uterus at *a*. Further contraction of the fold draws the uterus to *c*, with further torsion. At *d* and *e* are shown the effects of similar contraction of the left fold. The distance of the free edge of Douglas' fold and of its insertion into the pelvis from the median plane varies very considerably, and is considerably diminished by parametrical exudations. It appears to be the rule that, the

shortening being the same, the further outwards the fixation of the uterus takes place the more marked is the torsion, a rule that is certainly valid for the many cases in which the displace-

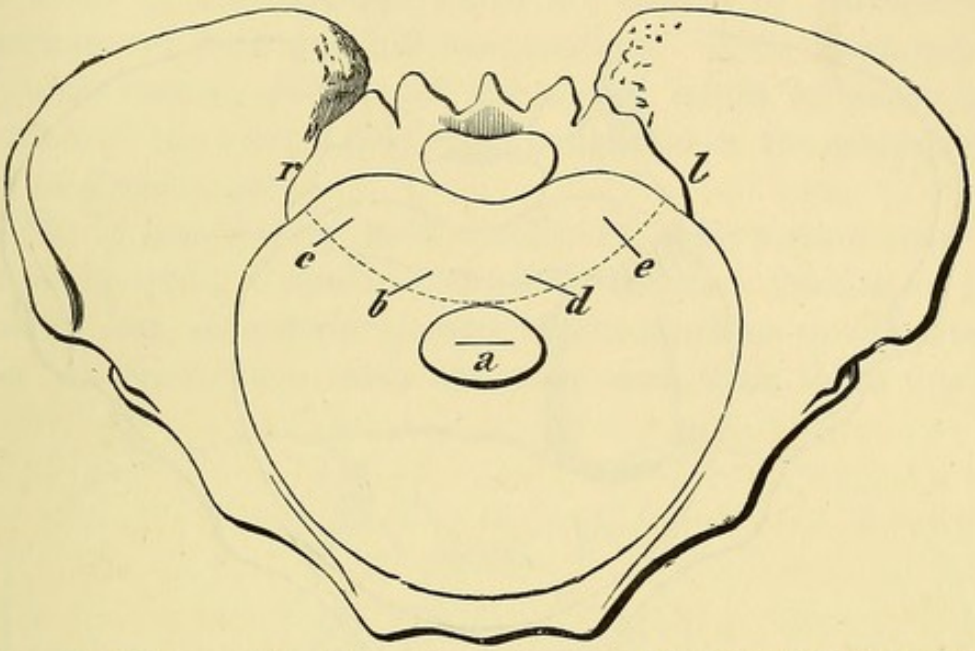


FIG. 32.—Diagram of the increasing torsion caused by increasing contraction of either of Douglas' folds.

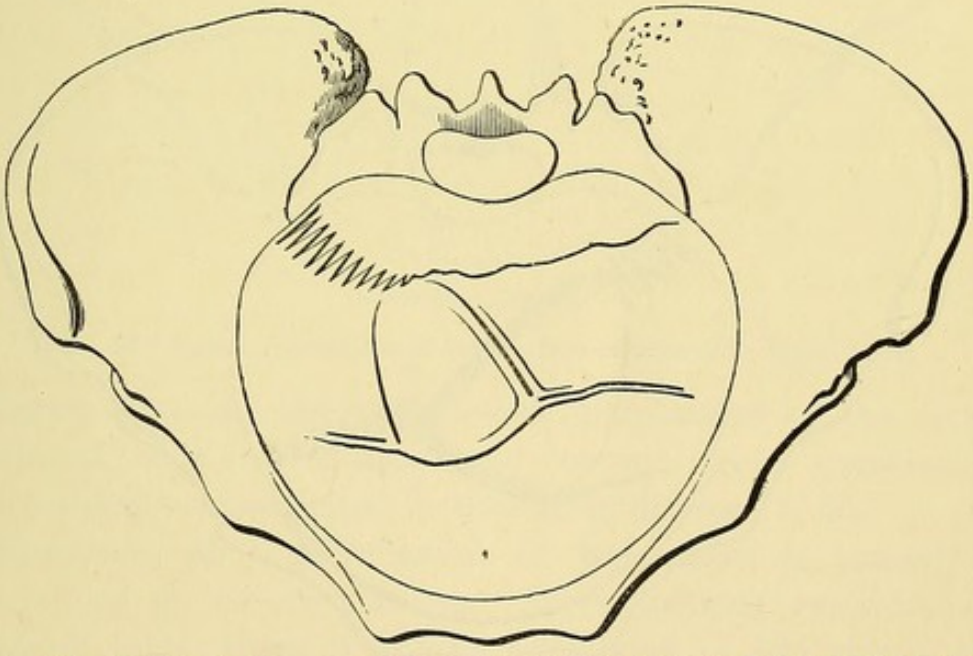


FIG. 33.—Sinistrotorsion caused by parametritis posterior of the right side, seen in the direction of the axis of the pelvic inlet.

ment of the uterus is entirely due to one-sided parametritis posterior. Such a case is represented in the above diagram.

If the parametritis extends considerably further forwards in the broad ligament, the resulting cicatricial contraction may

bind the lateral edge of the uterus to the wall of the pelvis on the same side, and simple lateral position instead of torsion may be the result. On the other hand, the effect of a para-

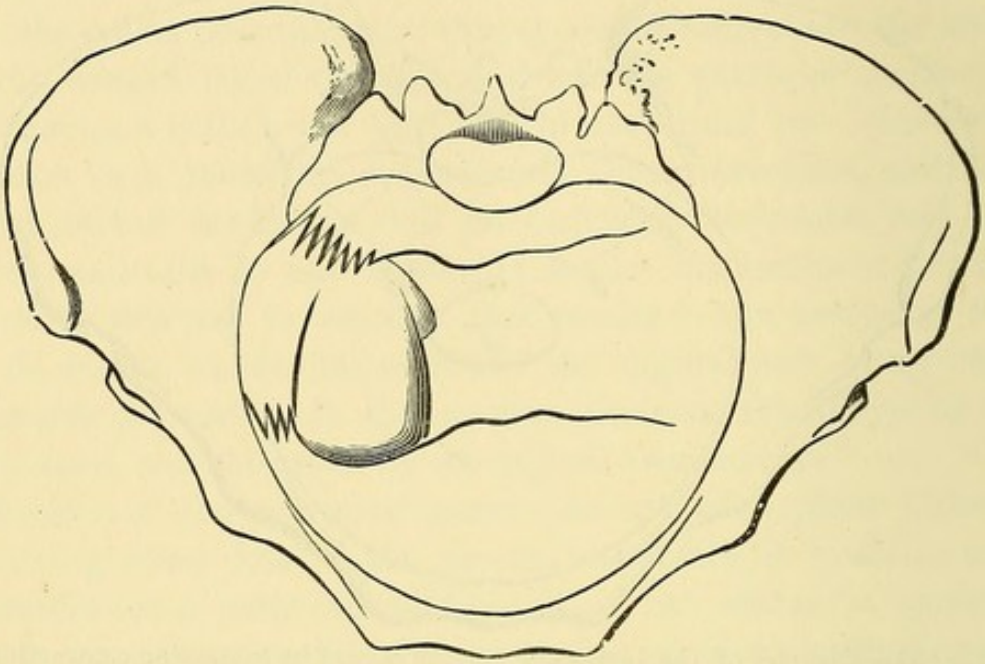


FIG. 34.—Lateral position of the uterus from extensive parametritis.

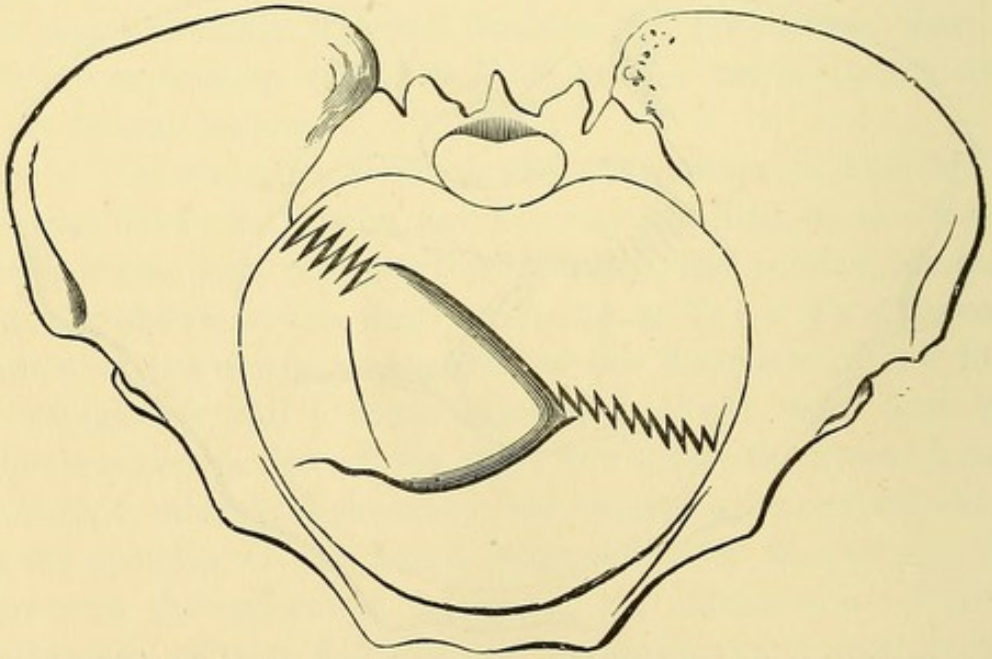


FIG. 35.—Parametritis posterior of the right side, and parametritis in upper part of broad ligament of the other side.

metritis posterior on one side, may be materially increased by a similar parametritis in the upper part of the broad ligament of the other.

Symmetrical contraction of both folds of Douglas fixes the uterus in retroposition in the median plane (fig. 36).

These are a few typical forms among the thousand different kinds of displacement which are caused by parametritic cicatrices and their manifold complications. A thorough knowledge of torsion, and of all the causes which influence the rotation of the uterus, is of much assistance in the comprehension of obscure cases.

§ 88. It has already been mentioned that torsion may be caused in quite a similar manner by anterior fixation of the uterus; but as anterior parametritis is much more uncommon than posterior, such cases are more rare than those due to

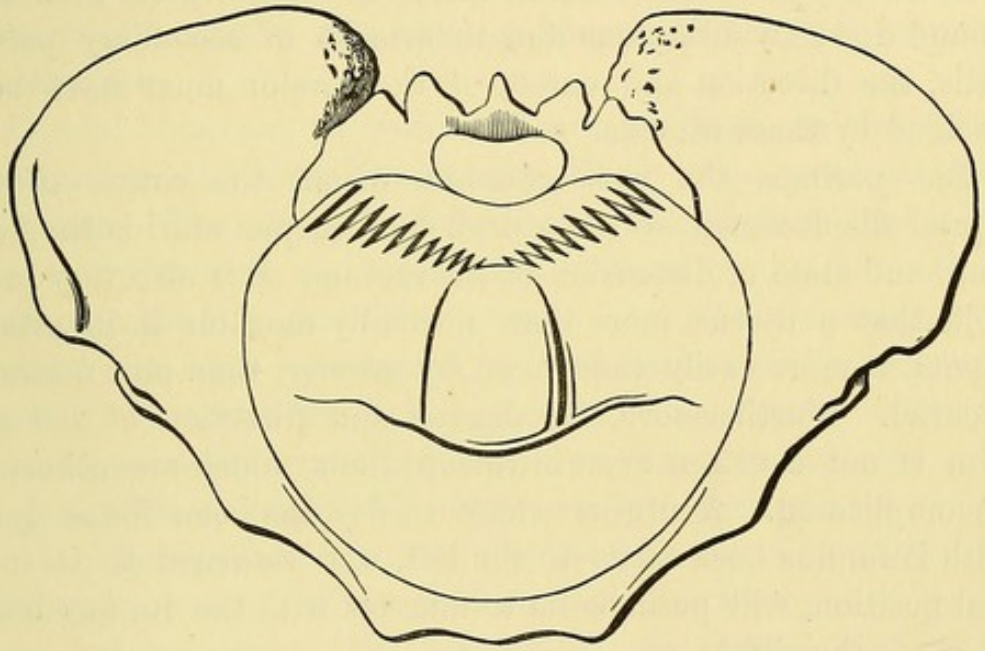


FIG. 36.—Retroposition due to contraction of both of Douglas' folds.

posterior fixation. An extramedian anteposition of the uterus combined with retroflexion and torsion from parametritis puerperalis, is represented further on in figures 54, 55.

Moreover, when retroflexion of the uterus is caused by the falling of the cervix uteri forwards from relaxation of Douglas' folds, there is apt to be torsion of the uterus also from inequality in the relaxation of the folds. When the retroflexion is recent this inequality may often be demonstrated. The fundus uteri sinks down backwards on that side on which the relaxation is greatest. If the torsion of the retroflected uterus is so considerable that its axis lies almost diagonally in

the pelvis, the fold of Douglas on the side in which the fundus lies must be much longer than the other, as its points of insertion are much further apart. Now since the fold on the side on which the fundus lies is generally not only longer, but also more relaxed than the other, its greater length cannot be explained on the ground that the torsion has increased the distance between its points of insertion. If such were the case it would necessarily be tense.

It is not unusual when both folds of Douglas are completely relaxed to find a cicatricial band situated somewhat far forward in one of the broad ligaments, a circumstance synonymous in its results with unequal relaxation of the folds.

If the body of a retroflected uterus in pathological torsion is bound down by adhesions due to attacks of secondary peritonitis, the direction and extent of the torsion must have been decided by these attacks.

But perhaps the most common of all the causes of the lateral displacement of the retroflected corpus uteri is the position, and state of distension of the rectum. It is also very probable that a uterus more than normally movable in its attachments, is more easily influenced by gravity, than one normally secured. Furthermore, the degree and direction of the torsion is not constant even in retroflexions which are otherwise uncomplicated. A uterus which to-day has been found lying with it fundus backwards to the left, and returned to its normal position, will perhaps lie to-morrow with the fundus backwards to the right.

§ 89. *Diagnosis.*—The diagnosis of torsion is obtained by bimanual palpation and examination with the speculum. As contraction or thickening of the folds of Douglas or cicatricial callous replacing them, is better made out by two fingers in the rectum than by palpation in the vaginal vault, the method most likely to reveal any posterior fixation or torsion that may exist is simultaneous palpation in the rectum and vagina, and through the abdominal walls. Palpation with the index and middle finger in the rectum and the thumb in the vagina, and with the finger tips of the other hand feeling the corpus uteri through the wall of the abdomen, will give us the most accurate knowledge possible of the shape, situation, and mode of fixation

of the uterus. It has been said that there is some danger lest during the palpation, the uterus may be dislocated in such a way that the position diagnosed is one given to it by the examiner's fingers, and not the one which it really occupied. This danger is less when the case is one of pathological fixation or diminished movability, than when the uterus is normally or more than normally movable and retains any position which may be given it. It is true that in the latter case greater dexterity and caution in the examination is required to make out accurately the position the uterus originally occupied, but in the former, the difficulty experienced in any attempt to move the uterus in certain directions, and the force with which when it has been moved in any of these directions it returns to its old position, are most important factors in determining the character and causes of the fixation.

Careful bimanual palpation is quite sufficient to distinguish torsion from the lateral flexion for which it has generally been mistaken. The sound only indicates the displacement in the course of the canal, a displacement quite as compatible with the idea of a lateral flexion or version. But after the existence of torsion has been ascertained by bimanual palpation, the introduction of a sound which has been curved to correspond to the flexion of the uterus, will by its lateral displacement give us the degree of the torsion. To check one's subjective ideas of the results of palpation it is very often instructive, to examine the patient in the knee-elbow position with the spoon-shaped speculum, and to observe the position of the vaginal portion and the oblique direction of the os uteri, which very often can hardly be brought into the field of view on account of the lateral displacement, and also, to ascertain the direction of the canal by the introduction of a sound in the same position, while the vaginal portion is steadied or drawn somewhat towards the vulva, by means of a pair of hooked forceps.

§ 90. As an instructive example in diagnosis I insert here three diagrams, Figs. 37, 38, 39, of a case taken from my journal.

The appearance which the uterus presents in the cylindrical speculum when it is affected by torsion, is singularly characteristic, and as many practitioners are more familiar with the use of this instrument than with bimanual palpation, it seems

well to mention that by examination with this speculum we can not only recognize torsion itself, but can also distinguish between the different degrees of the displacement, and thus from

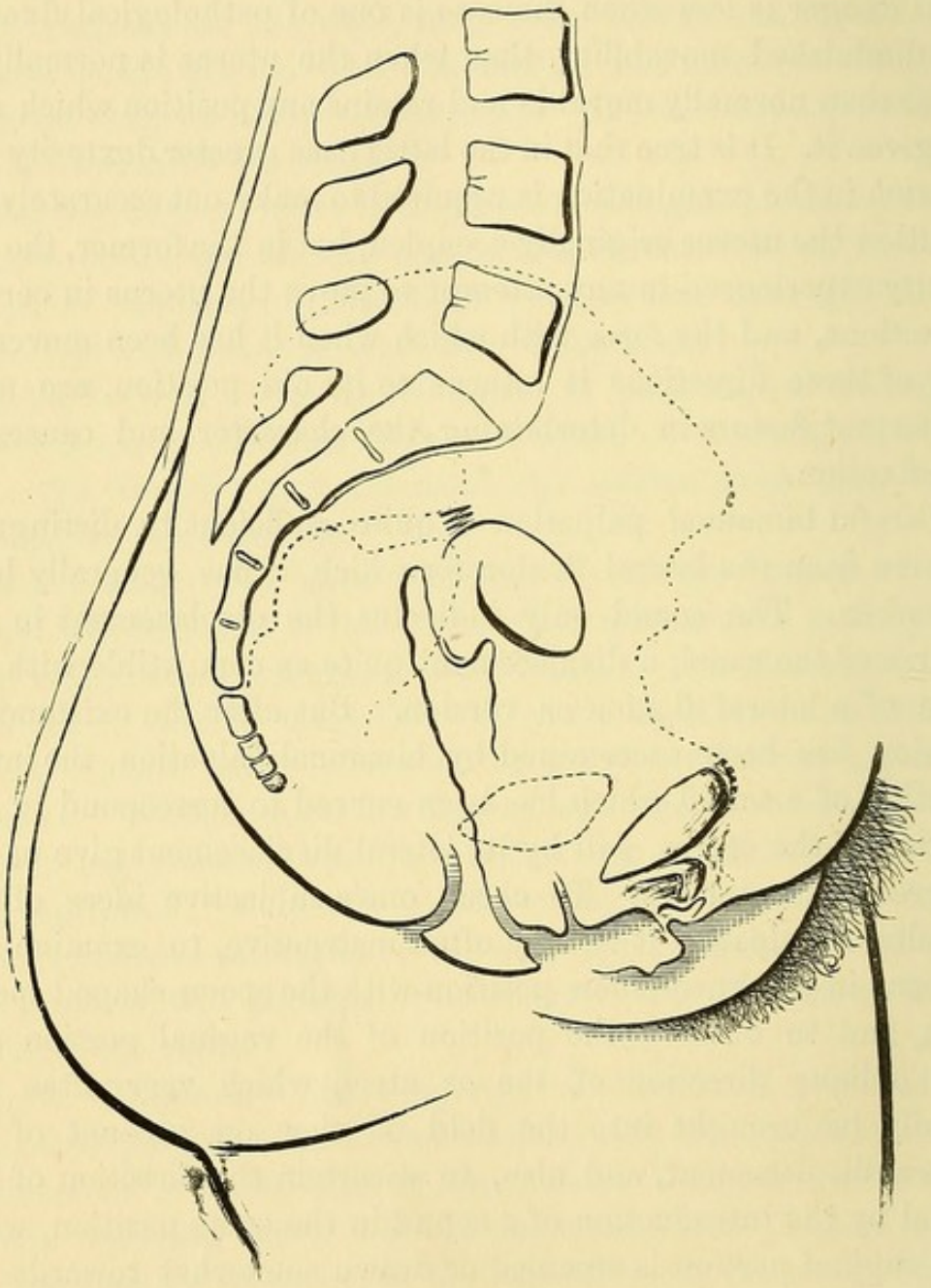


FIG. 37.—Great dextrotorsion of a uterus fixed in anteflexion right at the back of the left side of the pelvis, in profile.

time to time observe any alteration in the shortness and rigidity of unilateral posterior fixation.

If the distal end of the instruments used is oblique, the point corresponding to the extreme length of the cylinder must

be marked on the ocular end of each of them, in the way shown in figure 39. I also in my own journal, draw alongside the diagram of the vaginal portion which shows the existing torsion, two lines (Fig. 39, *b*) representing the capability of ro-

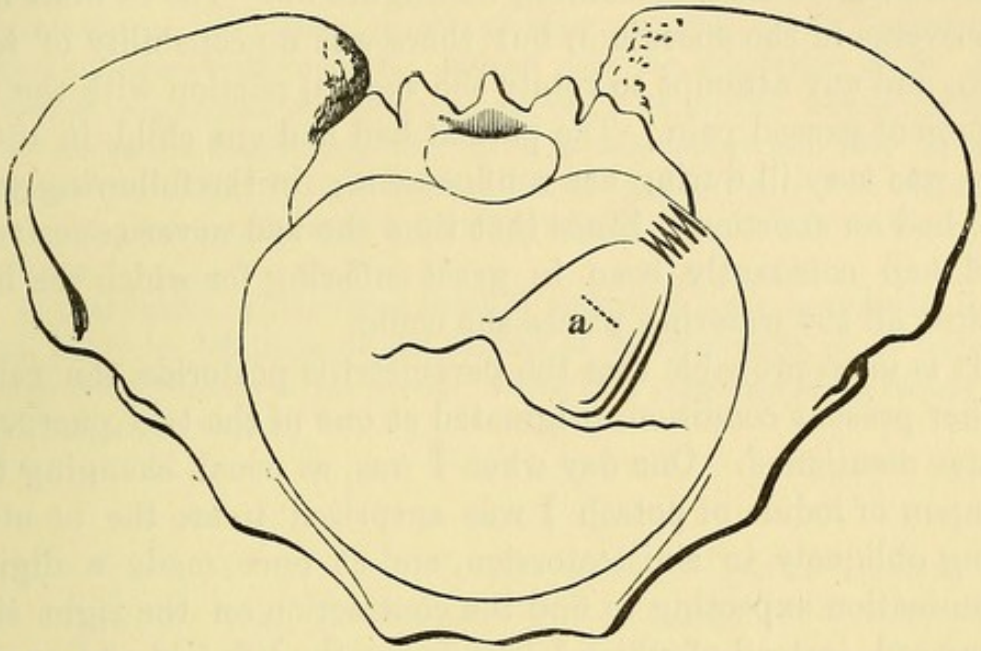


FIG. 38—The same uterus seen perpendicular to the plane of the pelvic inlet.

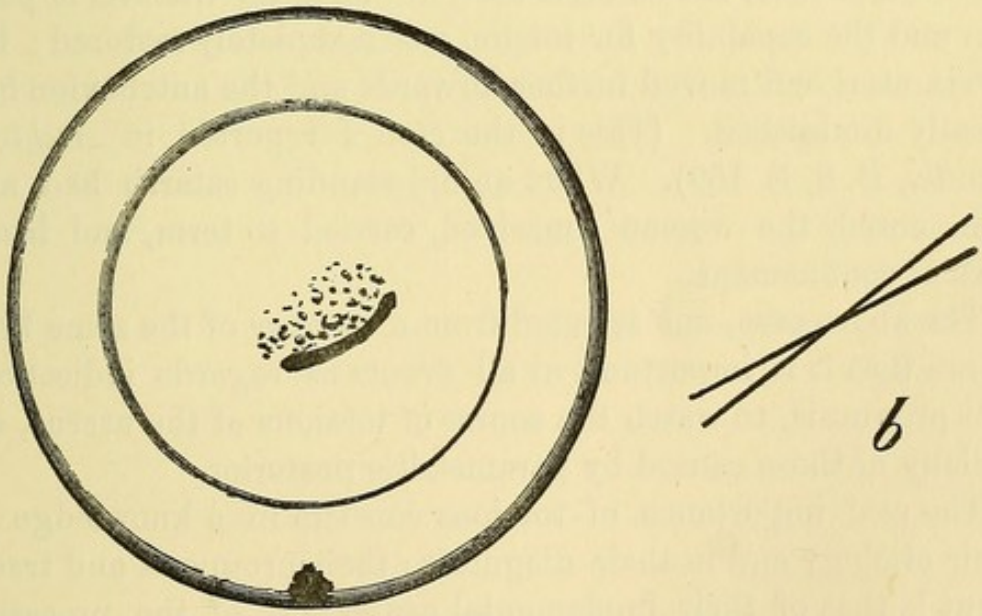


FIG. 39.—View of the same uterus in the speculum.

tation of the uterus, to enable me to judge of the favourable or unfavourable progress of the chronic parametritis—the fundamental cause of the displacement—from the changes in the torsion itself or in the capability of torsion, for these changes

pretty accurately express the lengthening or shortening of the parametric fixation. The following case is a good proof of this. In January, 1875, Mrs. O. from F., came under my treatment, for extreme bilateral posterior fixation with symmetrical median anteflexion, something like figure 36. The os uteri was transverse in the speculum, but there was no capability of torsion, and any attempt to rotate the vaginal portion with the instrument caused pain. The patient had had one child, in 1866, and was very ill during her confinement; in the following year she had an abortion. Since that time she had never conceived, and had constantly been in great suffering for which she had visited all the watering places she could.

It is most probable that the parametritis posterior, the cause of her present condition, originated at one of the two puerperal states mentioned. One day when I was, as usual, changing the tampon of iodide of potash I was surprised to see the os uteri lying obliquely in sinistrotorsion, and at once made a digital examination expecting to find the contraction on the right side increased, instead of which I found that the left fold of Douglas had become completely free. Some weeks later the right fold became free also, the os uteri then resumed its transverse position and the capability for torsion was completely restored; the cervix uteri had moved further forwards and the anteflexion had greatly diminished. (This is the case I reported in *Archiv f. Gynäk.*, B. 8, S 159). When an old-standing catarrh had also been cured, the woman conceived, carried to term, and had a normal confinement.

The above case, one selected from a number of the same kind shows that it is important, at all events as regards indications and prognosis, to watch the course of torsions of the uterus, especially of those caused by parametritis posterior.

The real importance of torsions consists in a knowledge of their etiology and in their diagnosis; their prognosis and treatment is that of their fundamental causes, *i.e.*, of the processes of parametritis.

SUMMARY.

Torsion of the uterus. A certain amount of dextrotorsion is normal, contraction in the posterior segment of the left broad ligament increases this dextrotorsion, contraction in the posterior segment of the right broad ligament causes sinistrotorsion. In each case the anteflexion of the uterus becomes considerably increased and stabile. In decided torsion the corpus uteri lies almost diagonally in the pelvis, so that the torsion may be easily mistaken for lateral flexion. Careful investigation shows that the flexion has taken place exactly over that surface of the uterus which was originally anterior.

In retroflexion of the uterus there is commonly some co-existing torsion due, either to difference in the tension of Douglas' folds, or to one-sided parametritic fixation of the cervix. Peritonitic adhesions of the fundus uteri also may cause torsion.

CHAPTER VII.

ANTEVERSION AND ANTEFLEXION.

§ 91. *Definition.*—As the normal position of the uterus is one of anteversion with anteflexion, the definition of pathological anteversion and anteflexion requires the greatest care. However sharply this definition may be drawn, it will not be possible to keep it, or the diagnosis of each individual case depending on it, entirely free from subjective interpretation, and as the objective distinction between normal and pathological anteflexion cannot be very well-marked, it is evident *à priori* that doubtful cases must exist. The more difficult the diagnosis necessarily is on this account, the more reason is there for us to have, before we attempt to make it, an exact definition of what is to be diagnosed. Definition and diagnosis are both made more difficult still by the facts, that in the first place under different conditions as to the amount contained in the bladder, the same uterus undergoes great changes in version and flexion—somewhere about 45° on the emptying of a moderately full bladder (§ 5 and 8)—and secondly, that the degree of flexion caused by emptying the bladder varies considerably even under normal circumstances.

In addition to this, the definition of pathological anteflexion and anteversion is more important than that of any other pathological displacement. For while the pathological nature of every other displacement is self-evident, we have here to do with the definition of an anomaly in a normal condition. It is for example always important to distinguish between torsion and lateral-flexion, a matter we discussed in the preceding chapter. As regards their etiology and prognosis the significance of the two cases, when correctly diagnosed, is perfectly distinct, but a difference of opinion as to such a displacement has little effect on the indications for treatment. The practical consequence of different views of one and the same anteflexion is quite another matter.

A woman seeks advice on account of vesical troubles or sterility; the uterus lies in anteflexion. One physician considering this position of the uterus normal, will look for other morbid changes on which the disturbance of function may depend, perhaps discover them, and obtain the proper indications. Another esteems the same position pathological and the cause of the distress and treats—perhaps with energetic remedies—the normal position of the uterus. It is therefore of great practical importance for us to have an accurate definition of pathological anteversion and anteflexion.

When it was held, as it used to be, that the normal position of the uterus was in or a little behind the middle of the pelvis, and that the normal variations in this position were very slight, if any at all (§ 3 and § 14), the definition of pathological anteversion and anteflexion was easy enough. According to that view, the uterus never under normal circumstances lay with its fundus forwards. Thus, E. Martin says in his work on the *Inclinations and Flexions of the Uterus*, published in 1870,* in regard to the definition and diagnosis of these affections, "I can only consider a forward or backward flexion or version proved from a clinical point of view, if the fundus uteri can be felt before or behind the vaginal portion by the finger, or if it is such as can be demonstrated by the sound." We now know that, when the bladder is empty, the fundus uteri can always, if in the normal position, be proved to lie in front of the vaginal portion, either by the finger or by the sound.

The definition of disease is often mixed up with instruction in diagnosis, but the custom is both improper and dangerous.

I have already insisted on the great care with which the definition and diagnosis must be kept entirely distinct from each other, especially in cases which are beset with difficulties. This is self-evident, and indeed the definition must be there before we can attempt to make a diagnosis. If, conversely, the definition of disease is to depend upon the possibility of the diagnosis, it possesses no objective value whatever, and difficulties or mistakes in diagnosis are no longer possible. Yet this is the way in which Beigel† defines pathological anteflexion.

* *Neigungen und Beugungen der Gebärmulter*, S 2.

† *Krankheiten des Weiblichen Geschlechts*, II, 1875, S 207.

He says :—" According to my experience, which is based upon 280 cases of flexion, the slight bend which the uterus exhibits in the normal condition can be made out but indistinctly and only under favourable circumstances. Any flexion that is distinctly perceptible on digital examination cannot be considered normal."

The old definition of pathological anteflexion was simply a definition of anteflexion, and must appear the more inadequate, the more completely the existence of normal anteflexion is recognised. Contrasted with the great mutability of normal anteflexion, *stability* seems to be a characteristic quite typical of pathological. Schröeder* attributed to the pretended symptoms sterility and dysmenorrhœa, the chief importance in the definition and diagnosis of pathological from normal anteflexion, and defended his definition in the warmest way against the objections I raised to it.† In the last edition of his work he has abandoned that definition, and has moreover almost abandoned the much talked of dysmenorrhœa and sterility as symptoms of non-congenital pathological anteflexion. (In regard to the congenital form, *vide* § 101).

To make use, in the diagnosis of any anomaly, of symptoms whose dependence upon that anomaly is not absolutely certain, is in itself a very questionable proceeding; to embody these symptoms in the definition of the anomaly, would be to complete the false chain of argument, and is one to be avoided with even greater care.

An anatomical definition of pathological anteflexion alone can serve as a sure foundation for its diagnosis. We should not consider the other displacements of the uterus to be properly distinguished except by anatomical definitions, such a definition must also be found for pathological anteversion and anteflexion, and since to those to whom the normal variability of the normal anteflexion is known, the angle of flexion is of no use in the definition of the anomaly, some other anatomical criterion must be found.

I have already pointed out, as characteristic of the displacements of the uterus, a certain stability in its position as com-

* *Handbuch*, 1874, 1879.

† Cf. *Archiv f. Gynäkologie*, VIII, S 134, IX, 68, 453.

pared with its normal movability. In this characteristic we may find the definition of the pathological displacements of the uterus forwards. Anteversion and anteflexion are pathological when they are stabile, when the normal movements of the uterus out of these positions are impeded.

Pathological anteversion is that position of the uterus in which extended in shape it lies with the fundus forwards, and is more than normally stabile.

Pathological anteflexion is that position of the uterus in which, permanently flexed over its anterior surface, it lies with the fundus forwards and is more than normally stabile.

In both these displacements the fundus lies forwards in a stabile position, and there is also in each of them an alteration in the normal flexion. In anteversion, there is no flexion and the flexibility of the uterus in the neighbourhood of the internal os is destroyed. In pathological anteflexion, even if the angle of flexion varies, there is always some flexion. The stability in anteflexion is not due, except in very rare cases, to rigidity of the uterine tissue as it is in anteversion, but far more frequently the organ is withdrawn by its retroposition from the action of the bladder which under normal circumstances would extend the uterus as it became itself distended, and the flexion remains though the flexibility is unimpaired.

In some cases, owing to excessive flexibility, the uterus, though extended in quite a normal way by the filling of the bladder, falls into acute angled flexion when the latter is empty, and it may be said that such flexion should be properly called pathological. At any rate, this condition which consists in an anomalous flexibility, and which depends upon post fœtal arrest of development, will be properly discussed in this chapter as allied to pathological anteflexion.

Since with the recognition of the normal position of the uterus, the old definition of pathological anteflexion, being as it was, only a definition of anteflexion, must be abandoned; since even the amended statement, that anteflexion is to be considered pathological if it can be felt, is false in principle and practically untenable, because the normal anteflexion also can be felt; since the symptoms that were considered characteristic of pathological anteflexion, are neither characteristic of it nor

dependent upon it at all, but rather upon the co-existing metritis and parametritis; and since, in consequence of these known facts, the mechanical treatment of anteflexion so long and so highly esteemed, turns out to be irrational and injurious, the question suggests itself, and will perhaps often be brought forward, whether there is in reality any such thing as pathological anteflexion at all.

In my opinion this question must be answered unconditionally in the affirmative. There would be more justice in raising a doubt as to pathological anteflexion being an affection of the uterus. The case is analogous to the dislocation of the heart by pleuritic effusion. In any list of the dislocations of the heart, that due to pleuritis, will assume a prominent place; in a systematic consideration of morbid processes in general, dislocation of the heart due to pleuritis would be discussed with the affections of the pleura, and not with those of the heart.

In regard to this analogy, there is no real difference between pathological anteflexion and most of the other displacements of the uterus. Like anteposition and retroposition, dextroposition and sinistroposition, like lateral version and torsion retroflexion and prolapse, it is generally the result of morbid processes outside the uterus, but anatomically as well as in regard to its diagnosis and prognosis it is one of the most important, because one of the commonest, displacements of the uterus, and because the processes by which it is caused are followed by serious derangement of the health.

§ 92. *Anteversion—Etiology.*—Rigidity of the uterus in an extended shape, loss of its normal flexion and flexibility, may be due to acute or chronic metritis, to deficient puerperal involution, more particularly after neglected abortion, or to diffuse proliferation of connective tissue arising from some other cause. The anteverted uterus is therefore not only rigid, but is found in a condition corresponding to the circumstances above mentioned, and appears broader, thicker, and longer than usual. The increased extent of surface which it offers to intra-abdominal pressure is itself sufficient to cause the fundus to lie permanently forward, especially when, as is the case in women who have borne many children, the loose walls of the wide vagina do not prevent the cervix from lying in a position extending

backwards and upwards, and when the pressure of the fundus uteri on the bladder, or the extension of inflammatory irritation, gives rise to the frequent desire to micturate, and prevents the retention of even a moderate quantity of urine.

The congestion or metritis which causes the extension of the uterus is often from the first accompanied or complicated during its course by parametritis posterior which leads to rigidity and contraction of the folds of Douglas. The anteversion then becomes more decided and more persistent, the cervix uteri passes into a higher position in the pelvis, and the intra-abdominal pressure falls more heavily and constantly upon the surface of the uterus which was formerly posterior, so that the organ cannot even for a time desert its anteverted position.

Intercurrent attacks of perimetritis may occur and lead to fixation of the uterus, but anterior adhesions of the fundus uteri from any other cause, are rare.

The accompanying figure shows a high degree of anteversion caused by chronic metritis and parametritis posterior, observed in November, 1876, in the following case:—

Mrs. B. from G., 32 years of age, the mother of four children, the last of which was born three years ago. She complained chiefly of pain at stool, vesical troubles, hemicrania, gastralgia, and she had also suffered from violent dysmenorrhœa for some years. Her sufferings had developed gradually since her first labour, in which her perineum was ruptured. The uterus was enlarged, the cervix was fixed high up the back of the pelvis by the folds of Douglas which on examination per rectum were found to be short, stiff, and tense. The rigid uterus lay extended, with the fundus lower than the cervix, at an inclination of about 30° to the horizon when the woman was erect. During the time the patient was under observation there was not much change, except that once after she had been treated at Franzenbad (Peat-baths) in the summer of 1876, the uterus was certainly less rigid, was flexed and flexible and movable *in toto*, and the dysmenorrhœa and vesical troubles also were lessened. Owing to want of proper care this improvement did not last long, exacerbations of the metritis and parametritis soon occurred, and the cervix resumed its extension backwards and upwards.

§ 93. *Symptoms.*—Cases of acute anteversion with symptoms

of incarceration are extremely rare, one such case has been reported by Edwards, caused by the incessant vomiting of sea-sickness. Where the displacement is caused by acute metritis and parametritis the symptoms of the inflammation predominate

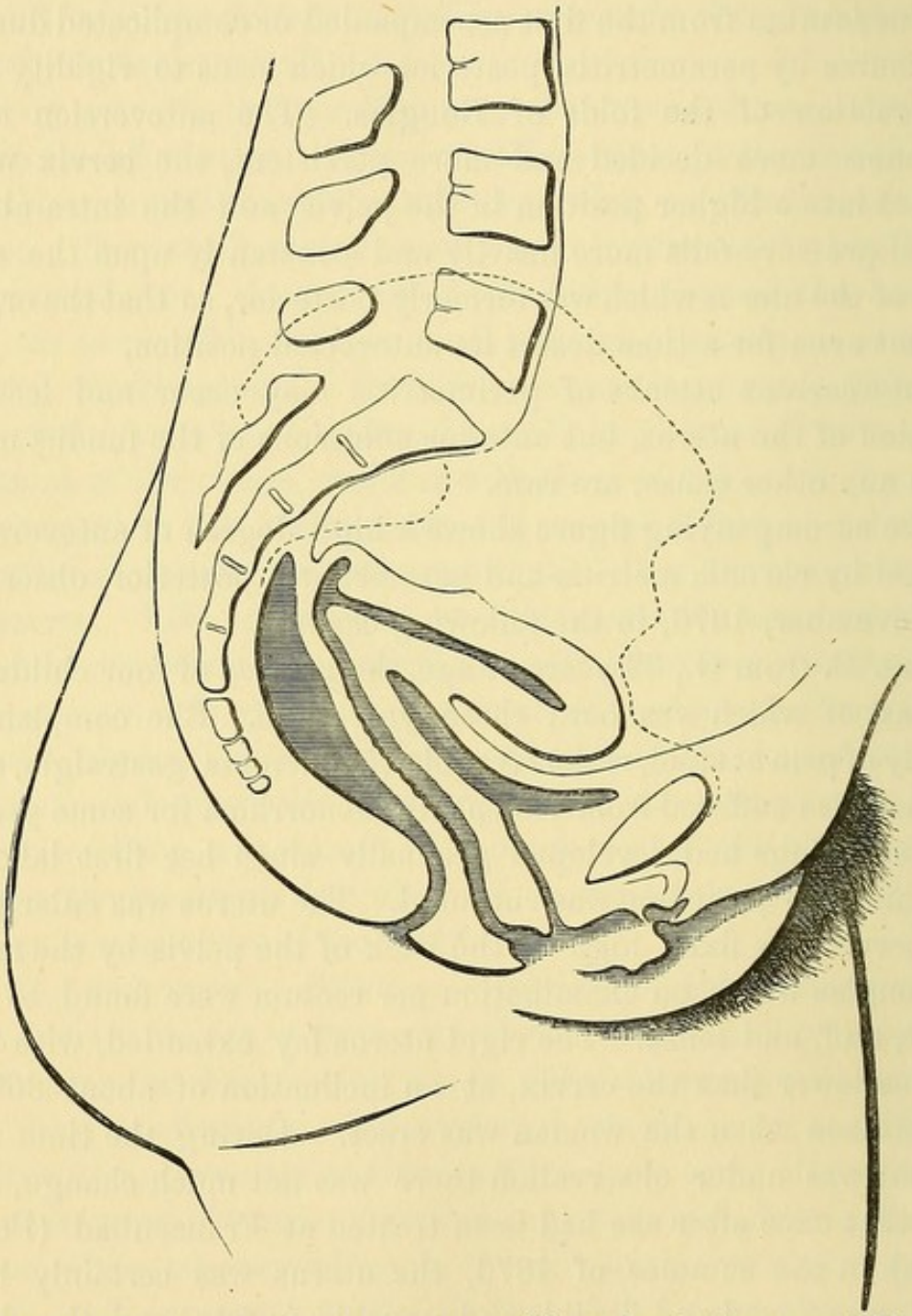


FIG. 40.—Anteversion due to chronic metritis, and posterior parametritis.

all others. In the vast majority of cases anteversion is a chronic process generally extending over several years, for such is the usual course of metritis and its results, and such that of parametritis posterior.

Vesical troubles, that is to say, pain whenever the bladder becomes even moderately full, frequent desire to make water and painful micturition, may be caused by the anteversion alone, by the permanent anterior position of the corpus uteri. This is not always the case, the vesical troubles which accompany anteversion, are very often less due to the mechanical pressure on the bladder, than to the venous hyperæmia of the uterus extending to the bladder and the presence of vesical catarrh. As this is proved by the results of appropriate treatment, a minute examination of the urine must never be omitted. The other symptoms accompanying anteversion are those of the chronic metritis and parametritis, the sterility in particular is due to the metritis. The symptoms of parametritis posterior, which is most closely connected with both anteversion and anteflexion, will be discussed with the latter.

§ 94. *Diagnosis.*—The diagnosis of anteversion is made up of the diagnosis of the extended shape of the uterus and that of the anterior position of the fundus. The vaginal portion, generally somewhat enlarged, faces backwards, or even backwards and upwards, towards the sacrum, while the fundus uteri presses down on the anterior vaginal vault.

On pressing up the corpus uteri through the vaginal vault and at the same time pressing it backwards through the abdominal wall with the other hand, it is found that there is more difficulty in imparting these movements to the uterus than there should be under normal circumstances, and that the uterus returns with a certain force from the position given to it by the examiner, into its former anteversion.

When the finger is in contact with the vaginal portion, while the fundus is at the same time palpated from the surface of the abdomen, every movement imparted to the corpus uteri is found to be accompanied by a correspondingly great movement of the vaginal portion, so that the corpus and cervix uteri must form one rigid whole, the normal flexibility being lost or at all events notably diminished.

It must be carefully remembered, that rigidity of the uterus in the extended shape, is not identical with anteversion. A rigidly extended uterus may fall into retroversion, to do so it must be abnormally movable, but such a state of abnormal

movability may be very protracted and may be accompanied by very distressing symptoms.

§ 95. *Therapeutics.*—In the exceptional cases of acute anteversion with symptoms of incarceration, manual reposition would be the only proper treatment.

In permanent chronic anteversion, the treatment is properly directed against the metritis and parametritis posterior, the original causes of the displacement. With the diminution of the infiltration caused by the metritis, the normal flexion of the uterus is approximately restored; with the disappearance of the posterior fixation the uterus regains its normal mobility *in toto*, and the cervix not infrequently moves down again nearer to its original position in the pelvis.

The idea of also treating chronic anteversion mechanically was a natural one. The elevation of the fundus by means of the finger in the anterior vaginal vault, or of a sound in the cavity of the uterus, and the methodical repetition of this proceeding, was the treatment formerly recommended, and is perhaps still practised occasionally, but with no advantage whatever, for the normal intra-abdominal pressure causes the immediate recurrence of the anteversion, as long as the conditions upon which its persistence depends are not removed. Attempts have also been made to treat anteversion by vaginal pessaries, by intra-uterine supports, and by operation.

The mechanical support of the anteverted corpus uteri from the vagina falls principally upon the bladder, pressure on which is the very thing to be avoided. It is true that if the uterus be enlarged and rigid from chronic metritis and yet more than normally movable, the various troubles which this excessive movability of the uterus causes, may possibly be relieved by some sort of vaginal pessary in itself innocuous, by some simple indiarubber ring or tampon, but it is a mistake to argue from these facts to pathological anteversion as we have defined it.

Graily Hewitt's cradle pessary, which is the one most generally recommended for anteversion, and the one of all others most rationally constructed, is represented after his own sketch in the adjoining figures 41, 42. It is bent out of a ring of wire covered with rubber, such as I use myself, and consists of two loops or bows of which one (*e, b, e, a*, fig. 41) is supported

on the anterior pelvic wall, and the other (*e*, *d*, *e*) embraces the vaginal portion and prevents it from getting too far back in the

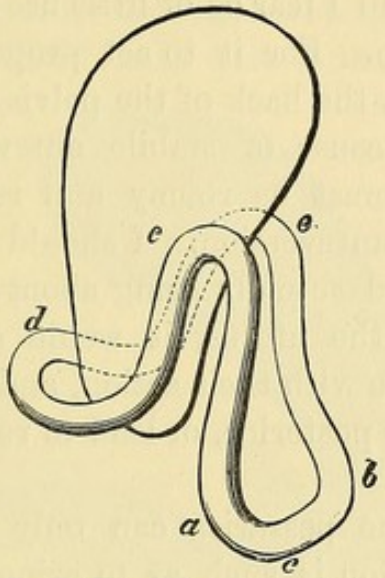


FIG. 41.—Graily Hewitt's pessary for anteversion.

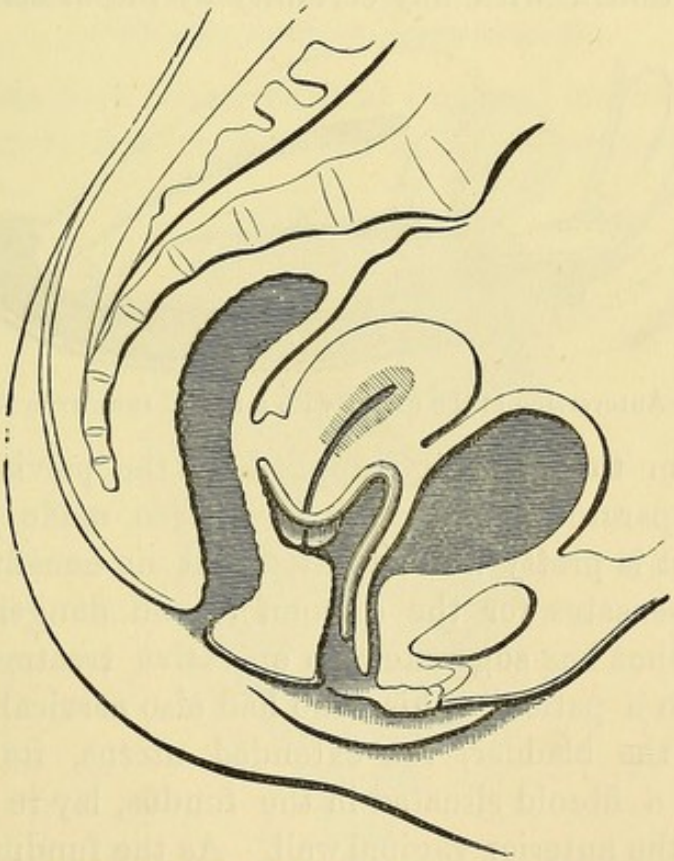


FIG. 42.—Graily Hewitt's pessary *in situ*.

pelvis. The corpus uteri rests upon the projecting parts of the ring between the anterior and posterior loop and is thus prevented from falling over forwards.

It may be seen from the description and pictures, that this pessary is well adapted to the purpose for which it was constructed, yet it would I fear be of little use in the most common form of anteversion. For it to act properly, the cervix uteri must not be fixed in the back of the pelvis, and this fixation is the most common cause of stabile anteversion; the anterior vaginal vault also must be roomy and relaxed, which is not usually the case in anteversion. I should also be afraid that if Hewitt's pessary did actually bring about the intended change in the position of the uterus, it would stretch the folds of Douglas, or interfere with their action, and so cause a return of the old parametritis posterior, or lead to relaxation of the folds and retroversion.

Even intra-uterine pessaries can only diminish the anteversion if their action is such as to bring the vaginal portion forward nearer to the middle of the pelvis, a result that can only be obtained with any certainty by the attachment of the

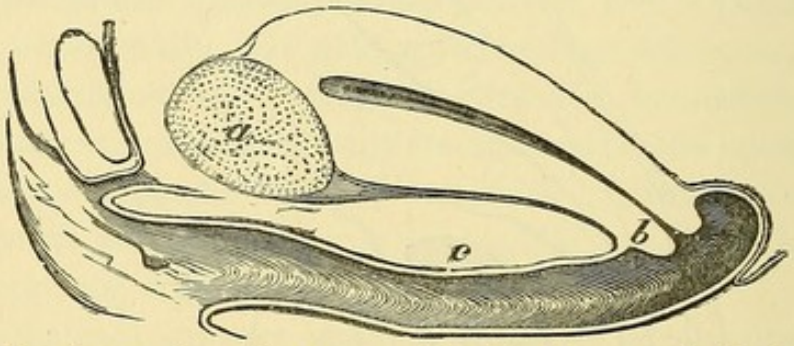


FIG. 43.—Anteversion of the uterus with a fibroid tumour in the fundus.

uterine stem to a bandage applied to the pelvis externally. Various apparatus of the kind have been made at different times, but it is pretty well admitted that no benefit they afford at all compensates for the discomfort and danger they cause.

Marion Sims has suggested an operative treatment of anteversion. In a patient of his, who had also cervical catarrh and catarrh of the bladder, the extended uterus, its length increased by a fibroid situated in the fundus, lay in anteversion parallel to the anterior vaginal wall. As the fundus uteri could be raised upright against the anterior pelvic wall by drawing the vaginal portion forwards, while at the same time a transverse fold was formed, as at *c d* fig. 44, he conceived the plan of fixing the uterus in the upright position by shortening the anterior wall of the vagina.

Two semilunar transverse strips half an inch wide were cut out of the anterior vaginal wall, one immediately in front of the vaginal portion, the other an inch and a half further forwards, and the surfaces of the wounds were united by silver wire.

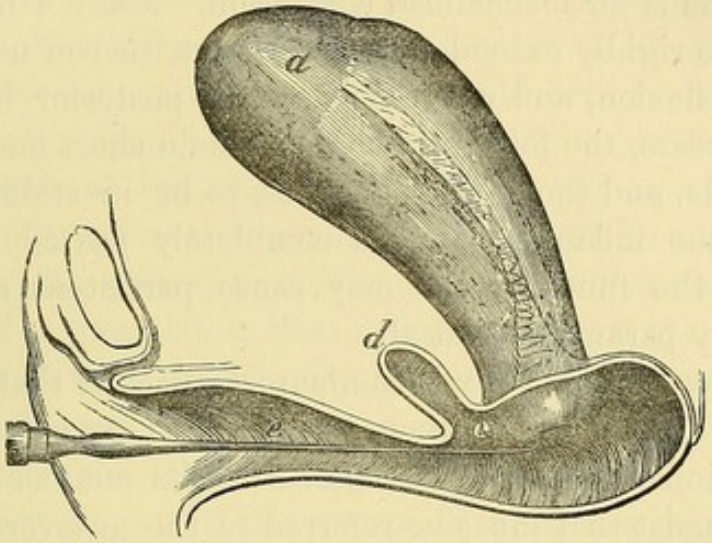


FIG. 44.—The same uterus as the above showing the transverse fold in the vagina when the cervix was drawn forwards.

The woman soon conceived, had a normal labour at term, and was afterwards free from the troubles she previously suffered.

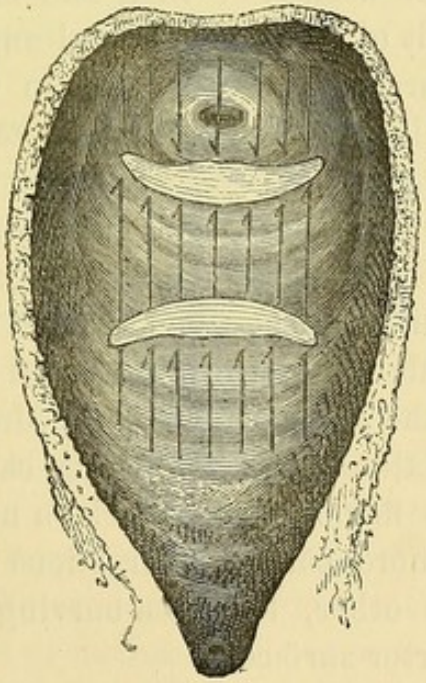


FIG. 45.—Anterior wall of the vagina showing the incisions in Marion Sims operation.

Sims performed this operation in two other cases, in one of which there was a similar fibroid in the fundus uteri.

Simon has operated in a similar way, but freshened the surface of the anterior lip of the os uteri, and secured it to the vagina still further forwards than Sims.

Some rare cases of anteversion, seem continually to renew their demands for mechanical correction. Many a uterus that has become rigidly extended from old metritis can never regain its normal flexion, and when parametritis posterior has existed for many years, the folds of Douglas remain short and stiff even if extensible, and the uterus continues to be in stabile anteversion after the inflammation has completely passed away. A fibroid in the fundus uteri may cause persistent anteversion without any parametritis at all.

In such cases, after any inflammatory mischief that may have previously existed has been cured, that is to say when there is no active inflammation of the uterus or its adnexa existing, if troubles persist that must be referred to the anteversion itself, Sims' operation may give the uterus a more central position in the pelvis, for the tension of the shortened anterior vaginal walls acts in the opposite direction to that of the folds of Douglas. And as in anteversion, vaginal and intra-uterine pessaries are either useless or their bad effects far outweigh any possible benefit of their mechanical support, I think that Sims' plan of operating must be kept in view for the exceptional cases in which mechanical correction of the anteversion is indicated.

§ 96. *Anteflexion—Anatomy and Etiology.*—The stability of the flexion of the uterus may depend on causes either situated in the organ itself or acting upon it from without. Of these, the former diminish or destroy the normal flexibility, and give rise to rigidity of the angle of flexion. Metritis, which otherwise causes rigid extension of the uterus, causes rigidity of the previously flexible flexion if it attacks a uterus fixed in anteflexion. Furthermore partial contractions in one wall, or enlargements in the other, lead to a curving or bending of the uterus over its shorter surface.

Atrophy of the tissue at the seat of the normal flexion is not altogether rare and is commonly a secondary result of acute flexion of long duration, but the very exceptional cases of flexion in the body of the uterus, and in the cervix can, from their

nature, only depend upon a partial contraction of the affected part of the uterine wall. I am not aware of any anatomical investigation of such cases.

Rigid anteflexion due to enlargement of the posterior wall from deficient involution of the seat of the placenta, has been seen by E. Martin. It may be caused in a similar way by tumours (myoma or adenoma with broad attachment) of this posterior wall. I may take this opportunity of mentioning that the old theory of the equilibrium of the uterus, according to which tumours of the corpus uteri dragged the organ backwards if in the posterior wall, and forwards if in the anterior, and which has quite lately been restated with great emphasis by Marion Sims and Beigel,* may be considered as set aside by our improved knowledge of the conditions of the normal and abnormal positions of the uterus.

Stability of the anteflexion is much more commonly due to causes lying outside the uterus. The uterus though quite normal and flexible may be prevented by the weight of an ovarian tumour from enlarging its angle of flexion even when the bladder is much distended, or by anterior peritoneal adhesions or contraction of the round ligaments from making its normal excursion backwards as the bladder becomes full.

§ 97. By far the commonest cause of pathological anteflexion is parametritis posterior followed by contraction of the folds of Douglas. As long ago as 1850, at a meeting at Giessen at which J. Vögel presided, Sommer insisted upon the importance of the shrinking of perimetric exudations (exudations found below the peritoneal investment, therefore according to our nomenclature parametric) in causing infractions and flexions of the uterus. Somner also quoted Velpeau as the author of the view, that the cervix uteri may be prevented by fixation from sharing in the movements which the uterus as a whole otherwise makes under the variations of abdominal pressure, in a way that necessarily leads to flexion of the uterus. The anatomical fact that in pathological anteflexion the cervix uteri is always displaced upwards and backwards in the cavity of the pelvis

* Marion Sims, *Gebärmutterchirurgie*. Deutsch von Beigel. 3 Auflage, 1873, S 191 ff. Figg. 95, 96, 97.

with corresponding extension of the vagina, is distinctly stated by Klob.*

The merit of the clinical discovery that shortening of the ligamenta sacro-uterina is a frequent cause of pathological anteflexion is due to E. Martin.†

Although Martin says that in anteflexion due to posterior fixation, the vaginal portion frequently lies lower than usual, and only in exceptional cases higher, a statement which is incorrect, there can be no doubt, from the accuracy of his description in other respects, that the condition of which he speaks is parametritis posterior. He was also aware that similar retroposition of the cervix uteri and anteflexion were sometimes results of hæmatocele in the stage of resorption, or of peritoneal inflammation in Douglas' pouch.

§ 98. The figures on pages 164, 165 illustrate the mode of origin of anteflexion from shortening of the folds of Douglas.

Fig. 46 shows the uterus in the position normal when the bladder is empty; the uterus is not supposed to be cut through, and the folds of Douglas are both seen, the left is attached near the sacro-iliac articulation, the right stands out of the picture towards the observer. The arrow (*a*) indicates the direction in which the folds of Douglas fix the uterus, drawing it back again towards the sacrum after each time it is pushed forwards by the distension of the rectum. The arrow (*b*) indicates the pressure of the diaphragm and abdominal walls, the action of which is such that not only the cervix which is attached to the posterior vesical wall, but also the corpus uteri with its anterior and posterior peritoneal investment, sink down with the upper surface of the bladder as the latter is emptied.

Fig. 47 represents the same uterus with shortening of the folds of Douglas; the consequences of this shortening are shown by the alterations in the picture. The elevation of the cervix in the direction (*a*) has extended the vagina. The cervix uteri and vagina, which when the bladder was empty met at an angle of about 90°, are now, whether the bladder is empty or not, almost in a straight line. The os uteri is removed one or two centimetres further from the introitus vaginæ by the shortening of

* *Pathologische Anatomie der weiblichen Sexual Organe*, Wien 1864, S 59 and 61.

† *Neigungen und Beugungen*, 1866 and 1870.

the folds of Douglas, and the section of the genital canal between these two points is necessarily straighter in its course than normal. There is consequently a gaping of the rectal pouch, a condition which is quite characteristic of superior fixation of the uterus, whereas the room left for the distension of the rectum higher up is notably diminished by the shortening of Douglas' folds. The entire corpus uteri is drawn towards the sacrum and therefore lies further away from the anterior pelvic and abdominal walls. The anterior attachments of the corpus uteri are extensible enough to allow such a movement to take place without rupture, yet their tension is opposed to the increasing posterior fixation of the cervix in such a way, that if the uterus is normally flexible in the neighbourhood of the inner os, the flexion is, when the bladder is empty, notably increased. Even in posterior fixation, as far as the flexibility of the uterus admits of it, the anterior surface of the uterus is kept by the intra-abdominal pressure in contact with the superior surface of the bladder, as the walls of the latter fall together when it is being emptied. On the other hand the great retroposition of the uterus prevents it being extended by the filling of the bladder; the accumulation of even a litre (35 ounces) of urine could not extend a uterus retroposed as in figure 47. Hence the stability of the anteflexion caused by shortening of Douglas' folds.

The process of retroposition and anteflexion is not as a rule so simple, nor by any means so symmetrical, as represented in the diagram. The parametritis posterior is generally either confined to one side, or much more extensive on the one side than on the other, so that torsion of the uterus occurs at the same time. Nor is the greatest contraction in the broad ligaments always at the free margin of the folds of Douglas. If, as is very generally the case in acute puerperal attacks, the parametritis is attended with extensive exudation, the cicatricial contraction which afterwards occurs is greatest rather to one side. More or less decided lateral position is then associated with the anteflexion and torsion. (See fig. 27, p. 128).

§ 99. The causes of parametritis posterior though pretty often of puerperal origin are, it must be stated, far more frequently not so. The occurrence of puerperal parametritis posterior is

very commonly due to infection after laceration of the perineum, or even after some trivial injury of the posterior wall of the vagina. The exudation is by no means always considerable, the acute stage is often very short and the local phenomena

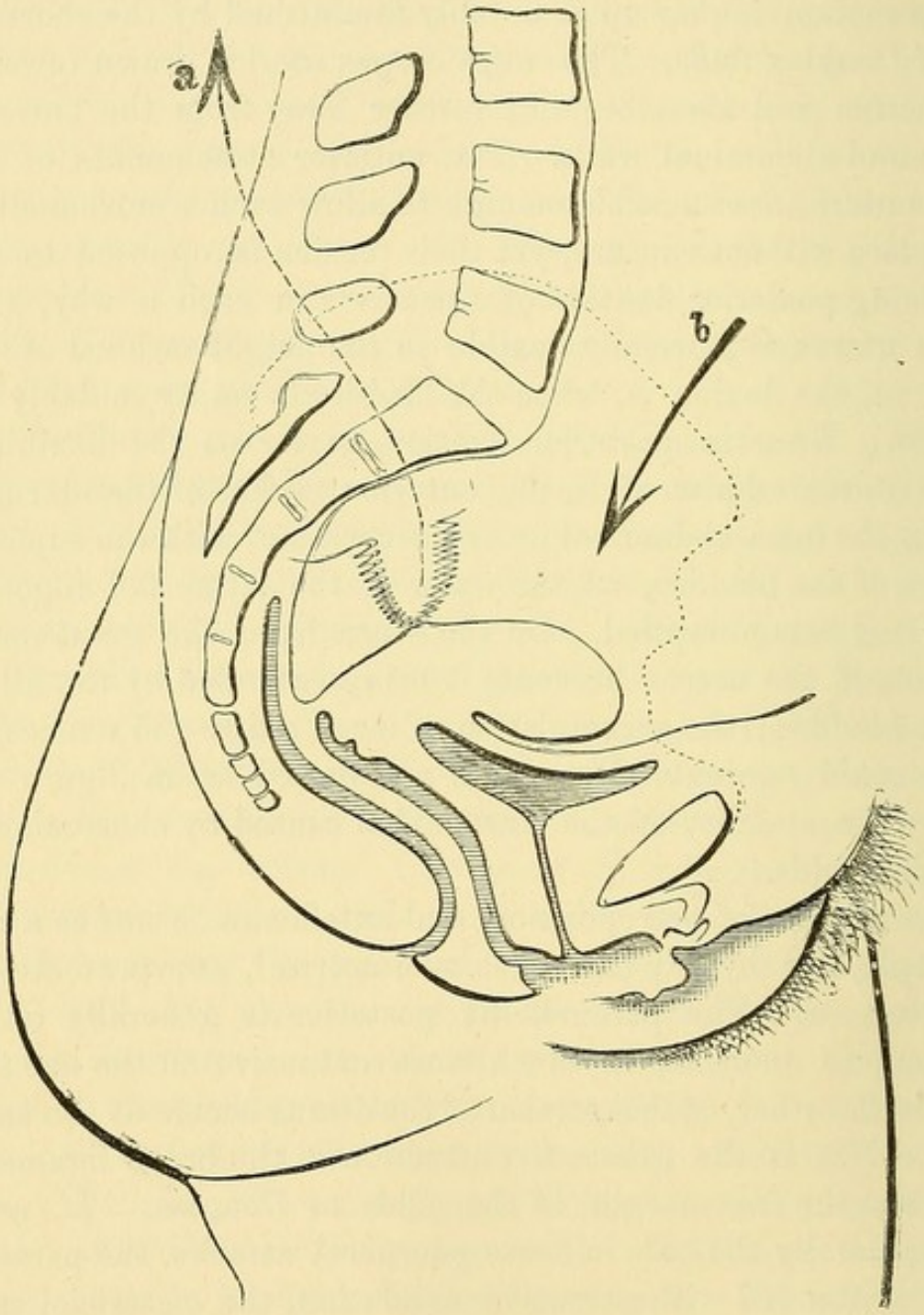


FIG. 46.—Diagram of the Uterus in the normal position the bladder being empty, showing the direction of the action of (*a*) the folds of Douglas and (*b*) intra-abdominal pressure.

very slight. The febricula of puerperal women, the single rise in temperature formerly spoken of, is often nothing but a parametritis posterior. In unmarried women and in

those who have never been confined, parametritis posterior is generally sub-acute or chronic from its commencement. Mechanical injury, repeated straining of the folds of Douglas by

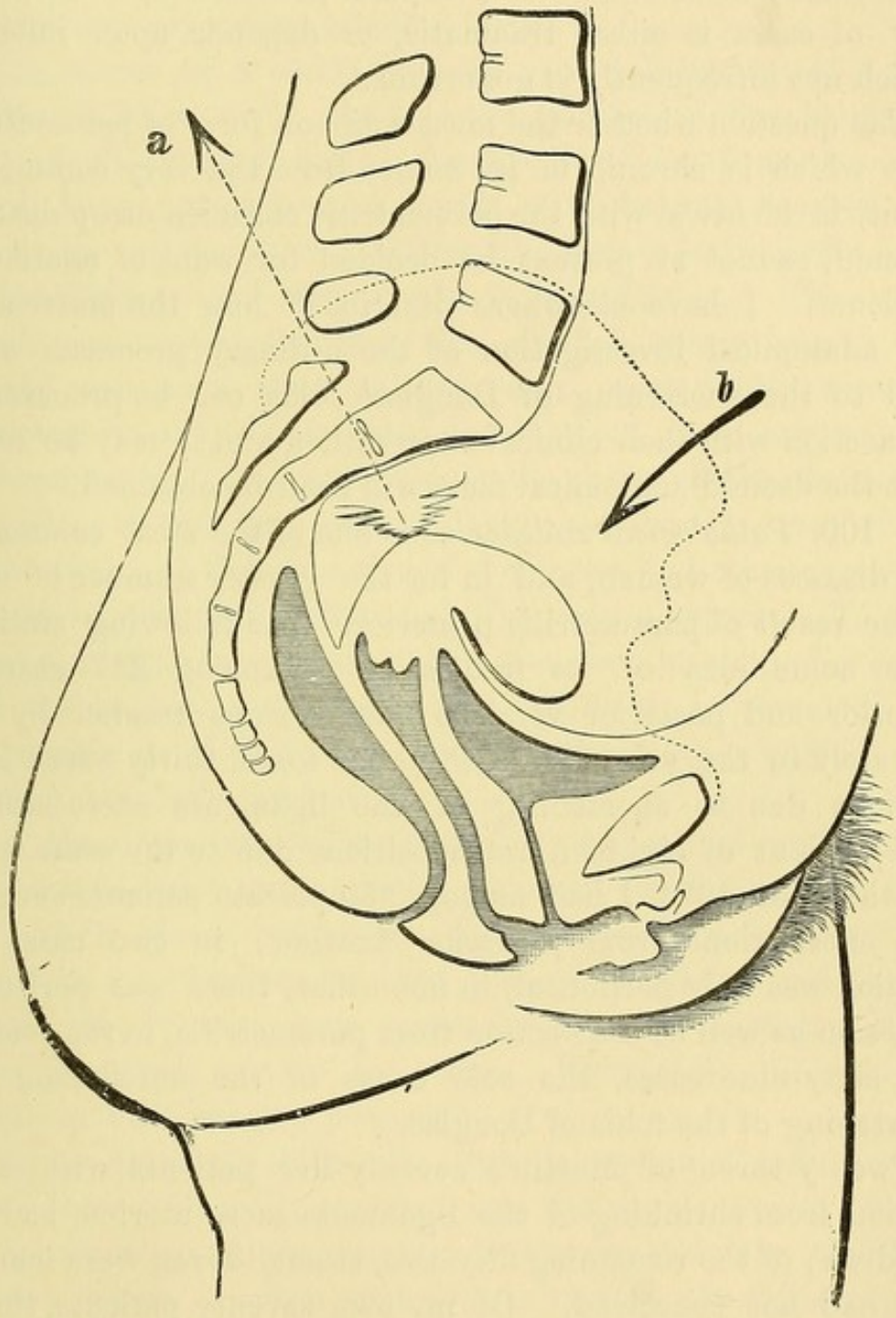


FIG. 47.—Diagram of Pathological Anteflexion arising from contraction of the folds of Douglas. *a*. Direction of the traction of the folds. *b*. That of intra-abdominal pressure.

the passage of large masses of fæces in habitual constipation, perhaps even infection from fissures in the rectum, and extension of the processes of endometritis to the parametrium,

especially as a result of the stagnationof the catarrhal secretion, appear to be the principal causes of parametritis posterior chronic from its commencement, in persons of the class just mentioned, while acute non-puerperal parametritis in the majority of cases is either traumatic, or depends upon infection which not infrequently is gonorrhœal.

The question whether the most common form of parametritis, that which is chronic in its course from the very commencement, is identical with the parametritis chronica atrophicans of Freund, cannot at present be decided for want of anatomical evidence. I have elsewhere described* how the material for the anatomical investigation of the ordinary processes which lead to the shortening of Douglas' folds can be procured, in connection with their clinical observation, and it may be hoped that the desired anatomical facts will soon be obtained.

§ 100. *Pathological Anteflexion* is one of the most common of the diseases of women, and in far the greater number of cases is the result of parametritis posterior. The following statistics give some idea of its frequency. Among 217 cases of anterior and posterior versions and flexions treated by him privately in the year 1869, E. Martin found thirty-seven anteflexions due to shortening of the ligamenta sacro-uterina, independent of eighteen retropositions due to the same cause. In the year 1874, I had among 250 private patients seventy-two anteflexions from posterior fixation; in two cases the fixation was only peritoneal, in one other, there was peritoneal adhesion as well as contraction from parametritis, in the remaining sixty-nine cases, the sole cause of the anteflexion was shortening of the folds of Douglas.

Twenty-three of Martin's seventy-five patients with anteflexion from shrinking of the ligamenta sacro-uterina, had had children; of the remaining fifty-two, twenty-seven were married but had not conceived. Of my own seventy patients, thirty-seven had conceived, and of these thirty-three had borne one or more children at full time; eleven were married but sterile, in twenty-two the hymen was intact.

§ 101. Under the term *Congenital Anteflexion*, so frequently met with in the literature of this subject, different authors un-

* Zwei Gynäk. Preisaufgaben, *Wiener med. Blätter*, 1880, No. 41.

derstand different conditions. The idea conveyed by it is vague and variable, and in no single one of all the conditions in the adult which are described as congenital anteflexion, is there internal evidence sufficient to prove that the condition depends on any anomaly existing before birth.

The uterus of a child consists, as is well-known, of a comparatively large cervix, the direction of which differs little from that of the vagina, and a comparatively small corpus uteri which is so united to the cervix as to be very flexible. In the bodies of new-born children the organ is generally found in anteflexion, and very rarely in retroflexion. The uterus which sometimes preserves this childish shape longer than usual, even until after puberty, may permanently retain it in young woman whose sexual development is in any way interfered with. This anomaly in the shape of the uterus, this retention of the form normal during childhood, is met with in connection with deficient size of the organ, and other post-fœtal arrests in the developement of the genital organs. In other cases the organ is not deficient in size, but the shape the cervix and the vaginal portion had in childhood, is retained, and the vagina itself, and more especially the anterior vaginal wall, is often decidedly too short.

In the virgin uterus, the shape of the vaginal portion may vary considerably, without the existence of any morbid affection of its tissue whatever. These variations in shape are, as a rule, intermediate between that of childhood and that of sexual life, or are rather arrests in the various stages of the transition from one to the other. Figures 48, 49, and 50, illustrate what has just been said.

Figure 48 shows the normal vaginal portion of a fully developed uterus, normally inserted into the vaginal vault. Figure 49 represents an approximation to the condition in childhood a form which is often met with in virgins, the difference between the direction of the cervical canal and that of the vagina is less, and the flexion of the corpus uteri is consequently, in most cases, more decided. Figure 50 shows the form of uterus, and the mode of its insertion into the vagina, normal during childhood. The peculiarity of the insertion of the cervix into the vagina in the last case, consists principally in the posterior

wall of the vaginal portion being much longer than the anterior, so that the so-called portio intermedia is much longer than in the normal uterus.

A uterus inserted into the vagina in this way, the direction of its cervix coinciding with the axis of the vagina, cannot well, if sufficiently flexible, lie otherwise than in acute anteflexion when the bladder is empty, and, particularly if the vagina is short, in retroversion when the bladder is full. The shortness of the anterior vaginal wall is an important factor in this. If the pelvis is normally developed in size, and the folds of Douglas are attached as usual, the genital canal is not long enough, on account of the shortness of the vagina, to make that diversion backwards and preserve the angle in which the

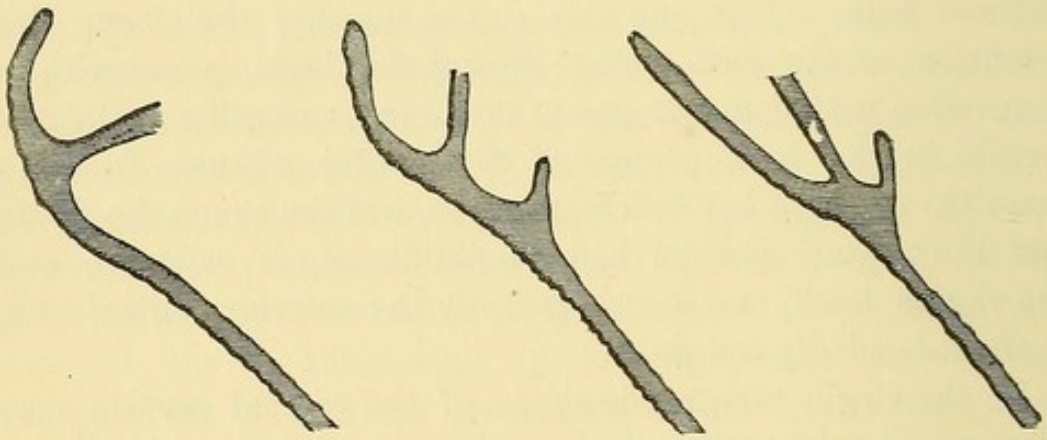


Fig. 48. Fig. 49. Fig. 50.

Various forms of the cervix, natural size.

vaginal vault and vaginal portion normally lie. The vagina, cervix uteri and folds of Douglas are, taken together, only just long enough in an extended position to reach from the vulva up to the level of the second sacral vertebra. (Compare figures 51 and 46).

Figure 51 represents, in position in the pelvis, a uterus which has retained the shape it had in childhood, and which exhibits the high degree of anteflexion due to this shape. The shortness of the vagina, more especially of the anterior wall, the slender and very pointed vaginal portion, the remarkable length of the portio intermedia, the situation of the cervix in the prolongation of the axis of the vagina caused thereby, and the extreme flexibility of the junction of the cervix and corpus

uteri, giving rise to acute angled flexion when the bladder is empty, are all characteristic of the puerile shape. The corpus uteri in most cases is, as shown in the figure, normally developed in regard to size.

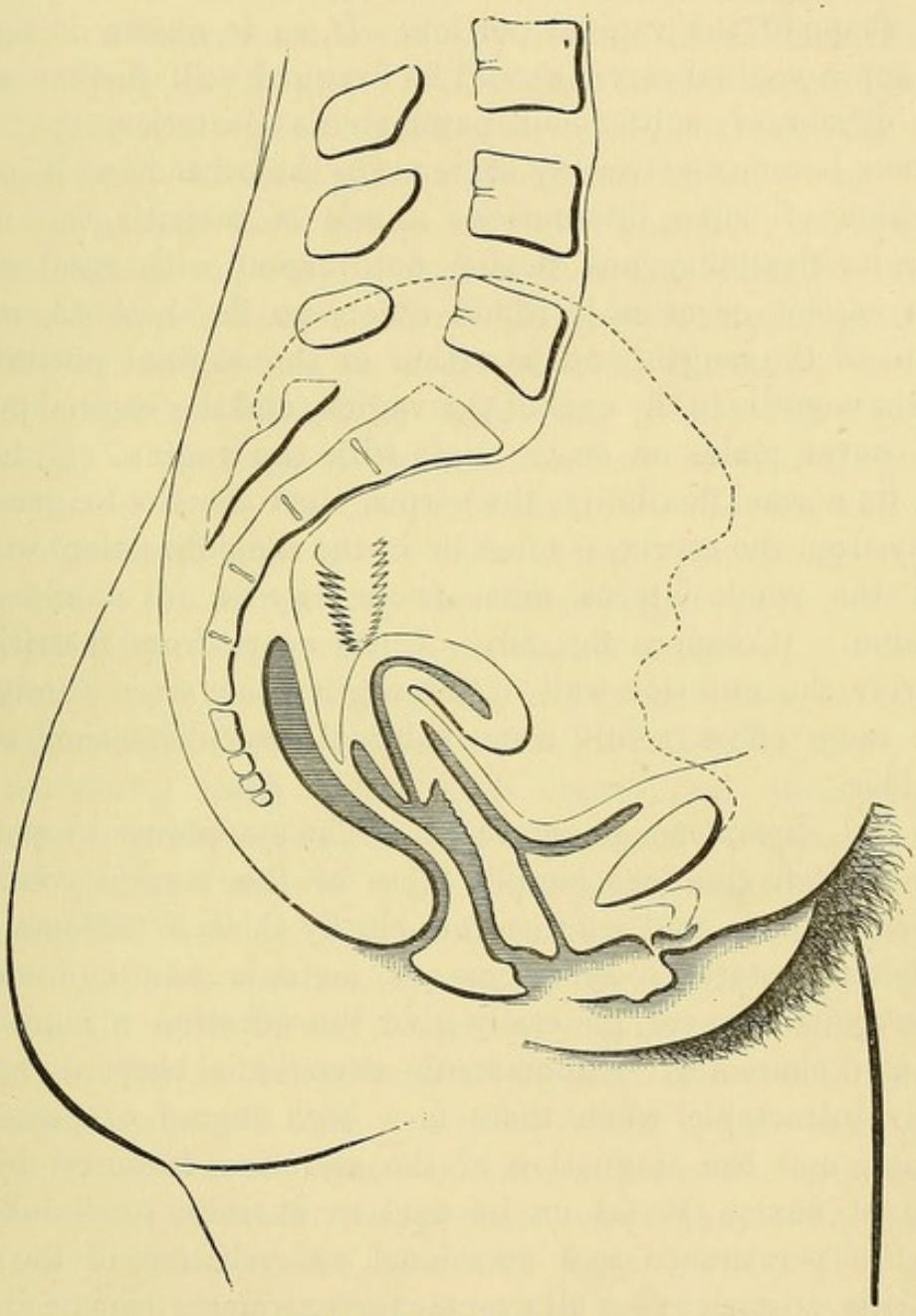


FIG. 51.—Puerile anteflexion.

This so-called puerile anteflexion represents a definite and well marked deviation from the normal, and is by no means rare. Between it and the perfect development of the normal shape of the virgin uterus on the one hand, and arrest of the organ in the size, as well as in the shape, it has in childhood

on the other, various forms are met with; any form of the displacement may moreover be complicated by the subsequent occurrence of metritis or parametritis posterior. It is nevertheless always possible to distinguish such displacements from those which are acquired, by the shortness of the vagina and the shape of the vaginal portion. If, as is shown in fig. 51, the supra-vaginal cervix should be dragged still further up by the effects of subsequent parametritis posterior, the anteflexion becomes extremely acute. On the other hand if, on the occasion of some intercurrent attack of metritis, the uterus loses its flexibility and flexion, anteversion with rigid extension cannot occur as it would otherwise do, because, on account of the length and insertion of the vaginal portion the cervix must lie in the axis of the vagina, and the vaginal portion can never make an acute angle with the vagina. If, having lost its normal flexibility, the corpus uteri can no longer bend away from the cervix, it must lie in the same direction with it, and the whole uterus must necessarily lie in stabile retroversion. (Compare fig. 53). Quite apart from metritis, the shorter the anterior wall of the vagina, the more surely does the same effect result from habitual over-distension of the bladder.

§ 102. *Symptoms of anteflexion.*—The symptoms of pathological anteflexion are simply those of the morbid conditions which cause it, and are therefore chiefly those of chronic parametritis posterior; symptoms of metritis and endometritis catarrhalis however, generally give the affection a more complicated character. Endometritis catarrhalis becomes exceedingly intractable when there is a high degree of permanent flexion, and the stagnation of the secretion, favoured by permanent flexion, seems on its part to exercise some influence on the persistence and occasional exacerbation of the parametritis posterior: at all events, the extremely beneficial effect which repeatedly washing out the uterus has upon the course of the parametritis, supports this view. There is no necessity to go into any detailed discussion here of the symptoms of these complications, which come under observation often enough without any anteflexion. Parametritis posterior is, however, an essentially characteristic constituent in our conception of pathological anteflexion.

Apart from the results of examination of the genitals, fever as a rule, is the only symptom of acute puerperal parametritis posterior, but in many cases there is only one elevation of temperature, which, being looked upon as "milk fever," is not brought under the observation of any physician. Pain and functional derangement are usually absent, unless there is some accompanying peritonitis. Voluminous exudation itself, which usually affords a product stiff to the touch from the very commencement, may take place without interfering in any way with the passage through the rectum. The folds of Douglas become broad and very thick, but their free margins do not necessarily approach each other. The persistent gaping of the rectum is remarkable, as, even when it is empty, the surrounding parts, stiffened by exudation, cannot fall together. It is only in the stage of cicatrisation that the folds begin to contract and draw the uterus towards the sacrum, and that their edges approach nearer each other. The narrowing of the room for the rectum may then be so serious as to materially endanger the passage, while the irritation caused by the masses of fæces being forced through it, may cause exacerbations of the inflammation, and lead to further limitation. I have seen this narrowing reach such a high degree, that colotomy was necessary to prevent the ileus that supervened being fatal; later on, the passage became quite free again, the woman bore another child and had a normal childbed. Even if there is great exudation and much contraction during the stage of resorption, the more acute the course of the attack, the more rapid very often is the *restitutio ad integrum* after the inflammation has passed away. On the other hand, I have seen most rigid and permanent cicatrices with unalterable displacement of the uterus after the suppuration of a parametritis, even when the exudation has not been very great. The acute attack is very often succeeded by a chronic stage protracted for years, especially when convalescence has not been patiently waited for.

§ 103. In this chronic stage, and also in the parametritis posterior which is chronic from its commencement, rectal troubles are among the most constant symptoms. There is pain just before defæcation, always if the contraction is ex-

treme, or if the folds of Douglas are very sensitive to extension; in milder cases, only when large accumulations of fæces are passed. In some cases the pain becomes really severe only after defæcation; in others the pain may be less intense, but the immediate result of emptying the bowel is a feeling of extreme discomfort in the pelvis, increasing up to one of faintness. If the stenosis is serious, solid balls of fæces may be permanently arrested until they have been softened by clysters, and the half softened motions may then show distinct marks of the stenosis. In connection with parametritis posterior, and as was evident, *ex juvantibus*, in direct dependence upon it, I have often observed obstinate diarrhœa that could not be attributed to any intestinal affection, and also that complex of symptoms that have been appropriately described by Leube as "Nervous Dyspepsia."

Vesical troubles, especially tenesmus and frequent desire to make water, though not quite so common are still not unusual accompaniments of parametritis posterior. They certainly depend to some extent upon disturbances in the collalateral circulation and in the innervation of the bladder; they are perhaps also partly due to the traction to which the posterior vesical wall is subjected to by the extreme retroposition of the cervix; but I believe that they depend to but a very slight degree indeed on the cause most frequently assigned them—pressure of the corpus uteri on the upper wall of the bladder. Proof of vesical catarrh is not uncommon.

§ 104. From the little summary, in § 100, of Martin's and my own observations, it may be seen that of the patients affected with parametritis posterior, a very great number were young unmarried or barren married women. The former, in most cases sought advice for severe chlorotic symptoms, sometimes with amenorrhœa, or more often with dysmenorrhœa; barren women generally complained of their sterility. The frequency with which chlorosis dysmenorrhœa and sterility are associated with anteflexion of the uterus due to parametritis posterior is remarkable, and the question, how far, and in what way, these symptoms may be dependent on this anatomical displacement, is an important one. While referring to what has been already said about these symptoms in the first part of this work, I will

shortly state my own opinion as to the relation these three symptoms bear to pathological anteflexion, without attempting to discuss this extensive question at all exhaustively.

It is admitted that chlorosis may occur quite independent of any disease of the genital organs, but it is in very many cases directly due to parametritis posterior, and coincident with it in its commencement, exacerbations, decrease and disappearance. In the most obstinate and most protracted cases of chlorosis, I have found evidence of long standing parametritis posterior, in extreme contraction of one or both of Douglas' folds with a corresponding extent of retroposition, acute angular anteflexion and sometimes consequent torsion of the uterus.

The appearance of the dysmenorrhœa also is often simultaneous with that of the parametritis posterior, though for some time, more or less, menstruation has previously been going on painlessly. Metritis and endometritis, which themselves cause dysmenorrhœa when they occur without parametritis or when they persist after intercurrent attacks of parametritis have passed away, are essential factors in the origin and maintenance of the dysmenorrhœa, when they come on before the parametritis, or during its protracted existence. The mere alteration in the shape of the uterus in anteflexion does not cause dysmenorrhœa, and the explanation usually given of the dysmenorrhœa generally accompanying pathological anteflexion, that it is "mechanical and due to retention" is absolutely false. For the proof of this statement I must refer to §§ 33 and 34, and to my earlier works.*

The reproach of sterility has been attached to pathological anteflexion from the time, not so very long ago, when every anteflexion that could be distinctly made out was deemed anomalous.

Sterility does commonly accompany pathological anteflexion and is due to the inflammatory processes with which the latter is associated. Endometritis, oöphoritis, and local attacks of peritonitis particularly, are as long as they exist obstacles to conception. If the inflammatory affections are cured, and if those last mentioned have not left any permanent residua behind them, the cicatrices in the parametrium and the permanent patho-

* *Archiv für Gynäk.*, bd. iv., u. bd. viii.

logical anteflexion which often remain are no bar to conception. Apart from the results of the treatment of barren women, this is proved by the great frequency with which cicatricial contractions of the posterior parametrium are accidentally discovered in pregnant and puerperal women.

§ 105. There is still something to be said about the symptoms of the puerile and so-called congenital anteflexion. When depending on excessive flexibility of the uterus and shortness of the vagina, such as described in § 101 and represented in fig. 51, it causes, as far as I know, no symptom whatever. If the genital organs have in other respects attained perfect sexual development, and no inflammatory affections occur to complicate the anomaly in the shape of the uterus, the individuals so affected menstruate and conceive in the normal way.

It is this puerile anteflexion, in my opinion, that people have so often described as congenital, and might consider themselves half justified in doing so, inasmuch as the condition represents an anomaly in development, even if not a fœtal one.

Schroeder* describes as congenital and pathological, a form of anteflexion characterised by the fact that the angle which the corpus and cervix uteri make with each other is almost constant, and only to be altered by the use of a certain amount of force. This congenital anteflexion according to Schroeder gives rise to dysmenorrhœa and sterility. Acquired anteflexion, on the other hand, is characterised by atrophy and withering away of the uterus and an inconstant angle of flexion, and gives rise to no symptoms of any kind.

I myself consider that the stability of the anteflexion and the stiffness in the angle of flexion are not congenital at all, but directly due to metritis and parametritis, and that the dysmenorrhœa and sterility, so often found with this anteflexion, are also due to the same metritis. The result of treatment is only one of the proofs of this, and whatever is to be considered as the cause of dysmenorrhœa accompanying stabile anteflexion, this dysmenorrhœa in the vast majority of cases, is neither congenital, nor even developed in childhood, for as a rule it does not exist when menstruation is first established but only comes on after the discharge has previously taken place without any pain.

* Schroeder. *Handbuch*, 4 Auflage, Leipzig. 1879, S. 147 and 148.

§ 106. *Diagnosis of Pathological Anteflexion.*—The diagnosis of pathological anteflexion is made up of the diagnosis of the anteflexion, and the diagnosis of its stability. The question whether the shape of the uterus is one of anteflexion may be determined by bimanual palpation and, in case of necessity, by the sound. I say, in case of necessity, for where the shape and position of the uterus cannot be made out by digital palpation, the sound is in reality nothing but a makeshift for diagnosis, and often a very imperfect one. I am not here alluding to the fact that when unskilfully introduced and pushed on plump in the direction in which the cavity of the uterus is supposed to lie, the instrument may cause serious injury. The uterus, if flexible, extends itself upon the sound, in whatever direction the latter may be passed, but for this very reason, the original position of the organ may easily escape detection by the sound, whereas it cannot do so, if a painstaking digital examination be made.

Anteflexion of the uterus is more difficult to make out when stabile than when normal, especially if the organ is fixed posteriorly by parametritis. In normal anteflexion the uterus lies well forward in the pelvis, and its mobility makes it easy to recognise between the fingers of the external and internal hands; when the cervix is fixed by parametritis, the uterus lies much further back, is harder to reach from the hypogastrium, and since even if within reach it is almost or quite immoveable, the recognition of its shape by digital palpation is a more difficult matter. In an ordinary vaginal examination the uterus fixed in anteflexion may easily be taken to be in retroversion, especially if the supra-vaginal cervix is rather large. Mistakes in the diagnosis of this sort are exceedingly common. (Compare § 27, 7). Simultaneous digital palpation of the rectum vagina and abdomen, in profound anæsthesia, will clearly elucidate any doubtful cases.

Although the sound cannot be recommended as a means of detecting anteflexion, at all events not in the first instance, yet when the position and shape of the uterus have been made out, it is generally necessary if there is any chronic metritis or parametritis, to make use of it to ascertain the length and calibre of the cavity of the uterus, and this must always be done when our advice is sought for on account of sterility. It

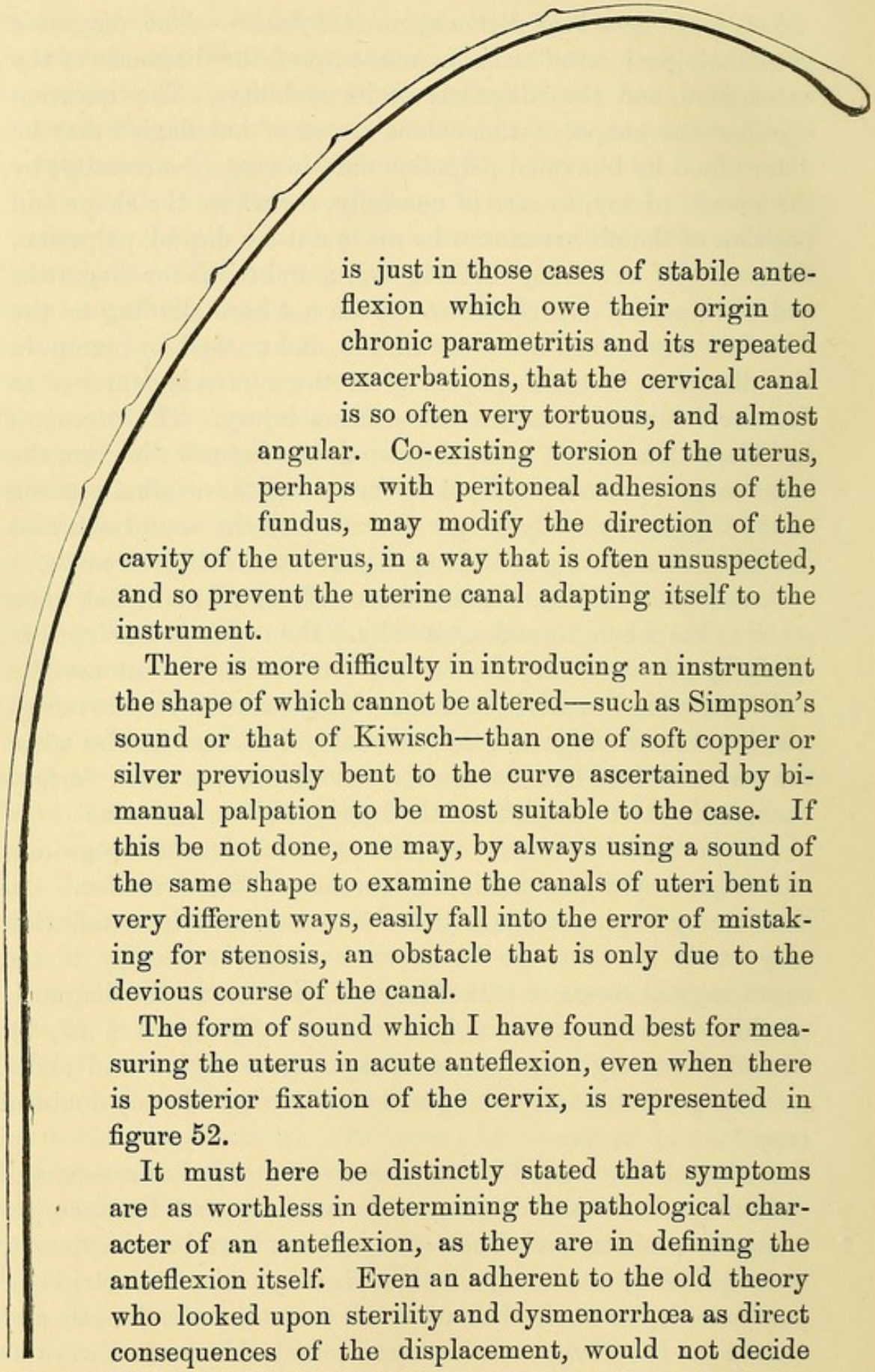


Fig. 52.

is just in those cases of stabile anteflexion which owe their origin to chronic parametritis and its repeated exacerbations, that the cervical canal is so often very tortuous, and almost angular. Co-existing torsion of the uterus, perhaps with peritoneal adhesions of the fundus, may modify the direction of the cavity of the uterus, in a way that is often unsuspected, and so prevent the uterine canal adapting itself to the instrument.

There is more difficulty in introducing an instrument the shape of which cannot be altered—such as Simpson's sound or that of Kiwisch—than one of soft copper or silver previously bent to the curve ascertained by bimanual palpation to be most suitable to the case. If this be not done, one may, by always using a sound of the same shape to examine the canals of uteri bent in very different ways, easily fall into the error of mistaking for stenosis, an obstacle that is only due to the devious course of the canal.

The form of sound which I have found best for measuring the uterus in acute anteflexion, even when there is posterior fixation of the cervix, is represented in figure 52.

It must here be distinctly stated that symptoms are as worthless in determining the pathological character of an anteflexion, as they are in defining the anteflexion itself. Even an adherent to the old theory who looked upon sterility and dysmenorrhœa as direct consequences of the displacement, would not decide the diagnosis from these symptoms; for, as no one

denies that dysmenorrhœa and sterility may arise from other causes, a normal position of the uterus and sterility due to some other cause, would together give the diagnosis of pathological anteflexion, and the consequence would be that while the uterus in the normal position would be treated for displacement, the cause of the sterility would remain unknown.

Stability is an essential characteristic of pathological anteflexion, as it is of all the displacements of the uterus, and once an anteflexion is found to be stabile the diagnosis is complete. The anteflexion of the normal and normally movable uterus is only very decided when the bladder is empty or very nearly so. A uterus that may lie in right angled or acute angled anteflexion when the bladder is empty will, unless its movements are impeded in some abnormal way, become more or less completely extended when the bladder is filled. We can sometimes ascertain by direct observation that when the bladder is filled, this normal extension of the uterus does not occur, and so decide that the anteflexion is pathological. The abdominal palpation of the fundus uteri, behind the crown of a full bladder, is a matter of difficulty, except under particularly favourable circumstances; it is therefore important for the diagnosis of pathological anteflexion for us to be able, when the bladder is empty, to recognise the existence of those anomalous conditions which make the anteflexion stabile. Those conditions are, as has been already pointed out, fixation of the fundus forwards, of the cervix backwards, or rigidity of the angle of flexion or pressure of a tumour upon the flexed uterus preventing extension. Anteflexion already made out is known to be pathological when the presence of any of these conditions is ascertained.

Rigidity of the angle of flexion is determined by the same manipulation that is used to determine the degree of flexibility (§ 6). Anterior fixation of the fundus—which is however most uncommon—by bimanual vaginal and abdominal palpation, the fingers, in trying to move the fundus upwards, detecting the adhesion that prevents this movement. Posterior fixation of the cervix from shortening of one or both folds of Douglas, is recognised by the elevation and retroposition, and it may be lateral position, of the vaginal portion which generally faces

forwards, and by the mobility of the uterus being thereby diminished or destroyed. In the combined vaginal and abdominal examination, by which the anteflexion was made out, the posterior fixation and its principal characteristics are very often made out also, and the anteflexion thus shown to be pathological. If the vagina is drawn out in length with considerable elevation of the uterus, or if the pelvis is deep and the external integuments are very thick, examination by the rectum in narcosis may perhaps be necessary in order to ascertain the character of the fixation and the extent of any existing exudation, or cicatricial adhesions. (Cf. § 41).

§ 107. *Treatment.*—Apart from the rare cases in which the angle of flexion is made rigid by metritis, or the pressure of a tumour prevents the extension of the uterus, or in which the fundus is bound down anteriorly by old peritoneal adhesions, the treatment of pathological anteflexion is simply that of parametritis posterior and its results.

If this parametritis posterior still exists, the primary condition for cure is to procure rest for the folds of Douglas. The causes, which give rise to active or passive variation in the tension of the folds of Douglas, and which are therefore to be avoided, are the passage of large masses of fæces, diarrhœa with tenesmus, any forcible action of abdominal pressure, and finally sexual intercourse. The regulation of the action of the bowels is a problem of particular importance the details of which need not be entered upon here. I will only mention that the simplest means have proved to be the best. An infusion of 5-10 grms. of rhubarb with sulphate and chlorate of soda, Carlsbad salts, or Hunyadi Janos water, rarely fail to act, even when their use is kept up for a long time. If clysters are absolutely required, they should always be prescribed warm, and a small warm injection of oil, milk, or emulsion of poppy seeds, should always be used a few hours before the purgative one.

If with the onset of the dysmenorrhœal pains just before the menstrual period, the tenderness of the uterus on any attempt to move it, *i.e.*, the tenderness of the folds of Douglas as may be proved on rectal examination, increases also, local bloodletting will prove beneficial, and under such circumstances, I

decidedly prefer the application of two or three leeches of the largest size, the blood being afterwards encouraged to flow, to the deep scarification of the vaginal portion. The menstrual congestion is thereby notably diminished, sometimes abruptly terminated, the hæmorrhage comes on later and without pain, and the effect on the processes in the folds of Douglas is decidedly more beneficial and permanent than that of repeated deep scarifications. The patient must remain in the horizontal posture for several days.

When even the unavoidable variations in abdominal pressure in women who have to get about cause pain, if the vaginal vault is not irritable on pressure, supporting the uterus by a tampon or figure-of-eight pessary sometimes gives great relief. Such a support acts in the same direction as the previously contracted folds of Douglas, and therefore in the first place increases the anteflexion which was already more than normal, but it thereby takes the weight off the painful folds of Douglas and protects them from traction, and thus affords more advantageous conditions for the favourable termination of the inflammation.

§ 108. Attempts must also be made to promote resorption, for which purpose the local application of iodide of potash proves very useful. Ten or fifteen grammes of a solution of one part of the iodide in three of glycerine, to which, if there is pain, from thirty to fifty drops of laudanum may be added, may be applied to the vaginal portion daily on a tampon of cotton-wool. If symptoms of iodism become distressing, simple tampons of glycerine, with opium if necessary, may be used for a time, or warm vaginal irrigation may be kept up for several weeks. In addition, warm baths, warm sitz baths, and wet compresses, preferably made with a solution of common salt, applied to the abdomen at night, are to be recommended.

At Franzenbad, Kissingen, Marienbad, and in many smaller watering places the treatment is specially adapted to the indications mentioned. It is the methodical application of heat, whether in the form of unmedicated waters, or in sulphur, peat, or sand baths, together with suitable care to ensure relaxed motions, that will most surely promote the absorption of

the residua of acute or chronic parametritis, even when of long standing.

At Köstritz, near Gera, the arrangements are well adapted for sand baths, by which a temperature as high as 45° R. (133° F.) may be applied for hours. I have seen excellent results from the treatment there, in the resorption of very old residua of exudation caused by parametritis, and in the extension of contractions in the parametrium of long standing.

The baths I have mentioned, and many others which also fulfil the above indications, are of ancient repute for their beneficial results upon chlorosis dysmenorrhœa and sterility, most especially when these affections are caused by anteflexion of the uterus. Their action was formerly explained as follows. The dysmenorrhœa and sterility were looked upon as results of the anteflexion, and the anteflexion as the result of relaxation of the uterus. It was supposed that the iron constituents in the baths had a tonic action upon the uterus and thus cured the anteflexion. That the dysmenorrhœa and sterility disappeared with the anteflexion required no further explanation, for the theory was so adapted to the result, that if the dysmenorrhœa and sterility were cured, the hypothesis that the anteflexion did not exist any longer was self-evident. That anteflexion as well as its symptoms has been cured by these baths, has been abundantly proved, but the causal relation is a totally different one.

The cause of the flexions which are accompanied by chlorosis dysmenorrhœa and sterility is not relaxation of the uterus. Anteflexion is made stabile by parametritis posterior, which, with the metritis and endometritis generally accompanying it, causes the chlorosis, dysmenorrhœa, and sterility. The inflammatory affections are benefited by the bath treatment and the pathological anteflexion is therefore improved also, not because the uterus becomes less relaxed, but because, with the disappearance of the inflammatory affection, the folds of Douglas regain their normal extensibility. By the recognition of the manner in which the local affections are influenced by treatment, the indications for the employment of the different means of cure will in many cases be made more definite, and we may aim at far more favourable results than any as yet obtained.

§ 109. Uterine catarrh is an essential factor in keeping up the parametritis with which it is so frequently associated.* Quite apart from cases of gonorrhœal infection, in which the causal relation is evident, I believe that the catarrh is often the earlier affection of the two, and that the parametritis has only developed in consequence of the stagnation of the secretion. The beneficial influence that methodical washing out of the catarrhal uterus with carbolic acid solution has upon the resorption of old parametritis posterior is astonishing. The cervical canal may be dilated up to just beyond the inner os first by laminaria, afterwards, at intervals of from one to three days, by the steel dilator, and thoroughly washed out with two per cent. carbolic acid solution. The cervical canal will afterwards always remain open, and the free outflow afforded to the secretion during any subsequent catarrh, is the best means of guarding against recurrent attacks of the parametritis.

§ 110. If the parametritis posterior is not of much longer standing than about one or two years, the uterus may, after the inflammation has been cured by the treatment mentioned, regain its normal position and mobility. When the parametritic contraction has existed for several years, the affected fold of Douglas generally remains abnormally short but becomes painless and extensible, so that even very large masses of fæces are passed without trouble, and if the uterus, for the sake of washing it out, is laid hold of by forceps, it may be drawn into the middle of the pelvis and even half the length of the vagina towards the vulva, without employing any force or causing any pain or injury whatever. On bimanual palpation in a state of rest one finds the cervix high up in the back of the pelvis, and the uterus lying in anteflexion and torsion, but still movable. There is, however, no indication to try and correct this condition any further, no morbid symptoms arise from it, and in spite of the anomalous position of the uterus, the women menstruate and conceive normally. If sterility still persists, the cause of it must be looked for in some other direction, and if one cannot be found—and all the conditions for conception are not within reach of investigation—the cervix may be dilated, so that free

* Cf. my essay. Der Probetampon, ein Mittel zur Erkennung der chronische Endometritis. *Centralblatt für Gynäk.*, 1880, no. 17.

access to the cavity of the uterus, one of the known conditions for conception, being far more than normally favourable, it may perhaps compensate for the unknown deficiency in one of the uncontrollable conditions.

§ 111. Finally, the cases last described, in which after all inflammatory complications are cured the anteflexion still persists, would be the ones most suitable for the application of an intra-uterine stem. But no further troubles arise from the flexion. We might certainly extend the uterus by a well applied stem, and extension used to be thought the normal form of the organ. But as, in spite of the stem, the posterior attachments would remain shorter than normal, we should by doing so only place the uterus in retroposition or anteversion, positions which are each of them further from the normal than anteflexion with superior fixation in the back of the pelvis the one sought to be corrected.

If an objection is felt to abandoning the treatment of the uterus until it lies in a normal position, it would in any case be more rational to endeavour to lengthen the folds of Douglas, by methodical traction on the vaginal portion, than to straighten the uterus mechanically. We should be careful against arousing fresh parametritis posterior, and the tendency towards relapses is by no means small. It is at all events more proper, because more beneficial to the patient, for us to abandon all local treatment when the above mentioned results have been obtained, and direct all our care to the improvement of the general state of the health of the convalescent, which is often greatly depressed by the prolonged existence of the parametritis posterior.

SUMMARY.

Anteversion is that position in which the uterus, extended in shape and more than normally stabile, lies with its fundus forwards. The rigidity of the organ is brought about by metritis; the stabile direction of the fundus forwards by various causes, the most common of which is short posterior fixation of the cervix.

The vesical troubles which accompany anteversion are sometimes caused mechanically by the position of the uterus, but are also often due to the co-existence of vesical catarrh ; the sterility is a result of the metritis.

The treatment must be directed against the active processes or residua of the inflammation. Pessaries, whether vaginal or intra-uterine, including even Graily Hewitt's the most rationally constructed of all, are injurious in stabile anteversion. In particular cases, Marion Sims' operation (shortening the anterior vaginal wall) may be of service.

Pathological *Anteflexion* is that position in which the uterus, more than normally stabile with its fundus lying forwards, is at the same time permanently flexed over its anterior surface. The most frequent cause of acquired pathological anteflexion is cicatricial contraction in the posterior segment of one or both broad ligaments, the flexibility of the cervix remaining normal. The puerile form of anteflexion improperly called congenital, depends in reality upon shortness of the anterior vaginal wall, a childish form of vaginal portion, and excessive flexibility of the cervix. The not uncommon combination of parametritis posterior with a puerile uterus, gives rise to the anteflexions of the highest degree.

Rectal troubles are the chief symptoms of the parametritis. Dysmenorrhœa and sterility, which are very commonly met with in anteflexion of the uterus, are symptoms of the accompanying metritis and endometritis.

The treatment of pathological anteflexion by intra-uterine pessaries is improper and generally injurious. The only admissible mechanical treatment, and one which often gives immediate relief, is to support the uterus from below by tampons, or by such pessaries as increase the retroposition of the cervix, and thereby relax the tension of the affected folds of Douglas. (Figure of eight vaginal pessaries).

The essential treatment of pathological anteflexion must in the majority of cases be directed against the parametritis posterior ; in it the methodical application of heat, by means of sulphur, peat, and sand baths, plays an important part. The accompanying dysmenorrhœa and sterility generally reqnire the local treatment of the endometritis.

CHAPTER VIII.

Retroversion and Retroflexion.

§ 112. *Definition.—Retroversion* of the uterus is the stabile inclination of the fundus uteri backwards, the shape of the organ being extended or sometimes slightly anteflected.

Retroflexion is the stabile inclination of the fundus backwards, the shape of the organ being one of the flexion over its posterior surface.

Upon the rare combinations of retroversion with anteflexion, and anteversion with retroflexion, as also upon the improper designation of acute anteflexion as retroversion of the cervix, I refer the reader to pp. 51-52, fig. 18, and to p. 65 (7).

There is little practical use in laying down any particular angle as the one behind which the uterus inclined backwards may be said to be retroverted,* for the retroverted fundus seldom becomes stabile until it reaches the posterior pelvic wall, and when that is the case there can be no doubt about the position being retroversion; but if some angle must be named, I would say that any uterus, the axis of which, even when the bladder is empty, makes with and behind the axis of the pelvic inlet, a stabile angle opening upwards, must be described as retroverted.

The definition of different degrees of retroversion and retroflexion would be of some value for the concise explanation of individual cases, if all authors defined these degrees in the same way, as they do not, any such definition is useless. A much more accurate explanation is given by naming the vertebra which answers to the fundus of the retroverted uterus, and which may be the last lumbar or any of the sacral or coccygeal vertebræ. Any uterus the axis of which, when the woman is standing up, is nearly horizontal, is retroverted or retroflected far more deeply than is usual, it is however by no means uncommon to find the fundus described as lying lower down than the vaginal

* Chrobak made a proposal of this kind.—*Wiener Med. Presse*, 1881.

portion. The line then taken as horizontal is probably not the one in general use in anatomical descriptions, which is the one that is horizontal when the body is upright.

§ 113. *Anatomy and Etiology.*—Retroversion and retroflexion sometimes, though rarely, take place suddenly, even when the uterus is not gravid, and apparently without the previous existence of any anomaly in the parts concerned. Such instances are occasioned by some sudden and very considerable increase in the abdominal pressure, violent vomiting, lifting some heavy weight, blows or heavy pressure on the abdomen, or a sudden fall of the body upon the sacral region.

For the occurrence of either retroversion or retroflexion from a sudden increase in abdominal pressure, great distension of the bladder is a necessary condition; only then can the increased pressure fall upon the anterior surface of the uterus, if the bladder is empty or nearly so, it can only increase the normal anteversion. It can, however, be understood that even when the bladder is empty, a fall on the sacrum may cause retroversion.

Retroversion and retroflexion are in most cases chronic in their occurrence, and prepared for by variations from the normal in the anatomy of the parts.

In addition to such tumours of the uterus itself, of the bladder, or of other organs, as may be the immediate cause of retroversion, or may increase and make irreducible an existing retroversion, there are, as a matter of fact, five different anatomical conditions which favour and may directly give rise to the occurrence of retroversion and retroflexion of the uterus. Five essentially different forms of retroversion and retroflexion arise from these five causes.

§ 114. (1) Arrest of development leaving the uterus in the puerile form described in § 101, sometimes leads to retroversion. The original shortness of the anterior vaginal wall being then permanent, it necessarily happens that, the capacity of the bladder being the same, complete retroversion of the uterus is caused by a distension of that viscus, which under normal circumstances merely causes retroposition. If such a uterus loses its flexibility, from some intercurrent attack of metritis, the retroversion remains stabile even when the bladder is empty. Indeed the ordinary distension of the bladder is of more effect

in making retroversion or retroflexion of the uterus stabile under the anatomical conditions mentioned, than under normal circumstances. Rigidity of the vagina and elongation of the vaginal portion—conditions often associated with the arrest of

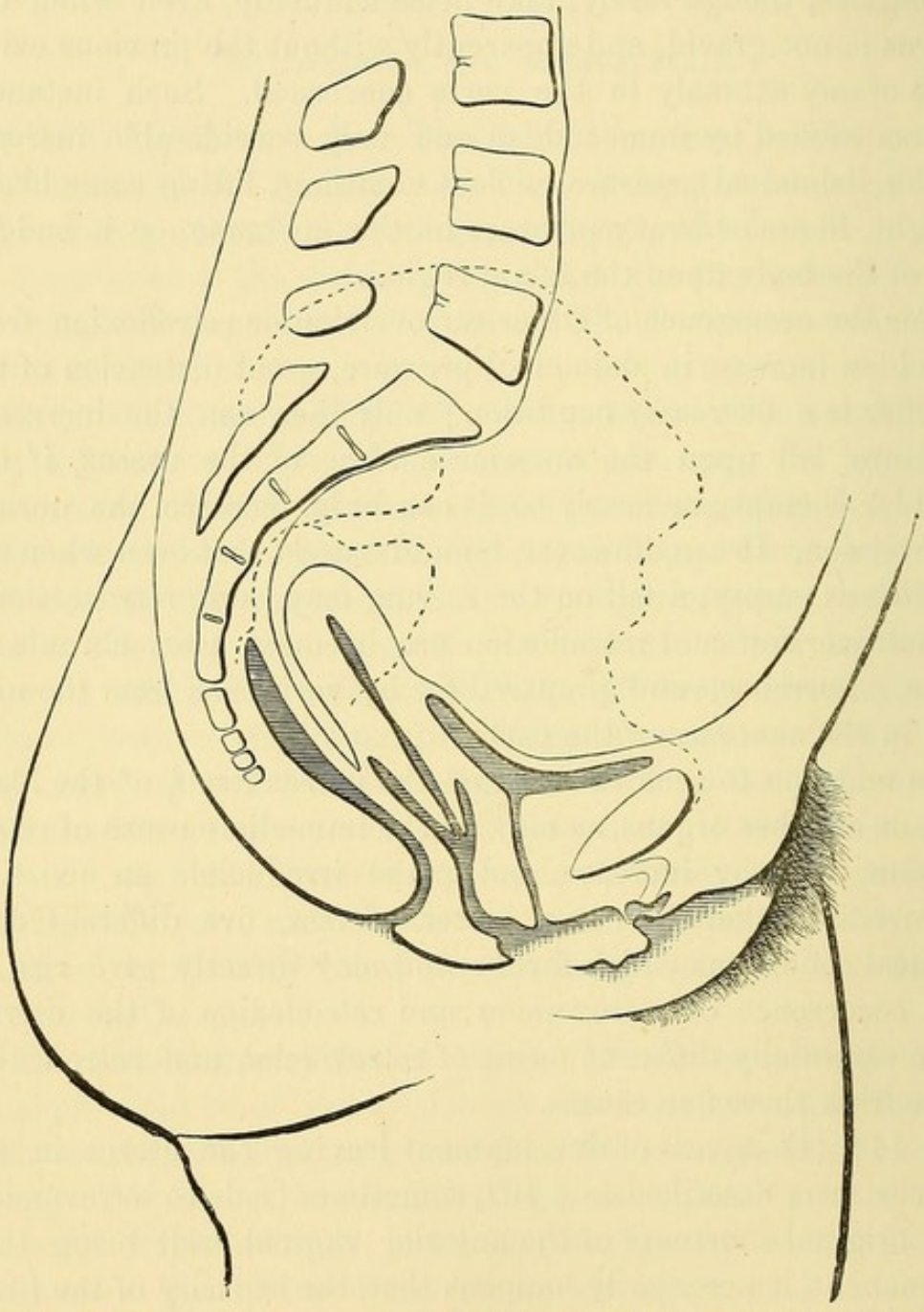


FIG. 53.—Retroversion from arrest of development of the uterus in the puerile form.

development just mentioned—materially assist in promoting the stability of the displacement.

Fig. 53 is an example of this by no means uncommon form of retroversion. It shows the condition found on July 13th,

1878, in an unmarried woman 46 years old, whose sufferings were due principally to stenosis of the mitral orifice, and but to a very slight extent to the retroversion.

In cases of congenital shortness of the vagina the combination of retroversion with a trace of normal anteflexion, already mentioned as being on the whole exceptionally uncommon, is met with comparatively often.

Since senile involution of the genital organs is frequently accompanied with shortening of the vagina, the capacity of the bladder being unaltered, it also frequently leads to retroversion of the uterus. One often comes quite accidentally upon retroversion in old women, in whose history no symptom whatever can be elicited, to make it at all probable that the retroversion existed during their sexual life.

§ 115. (2) The anteposition of the cervix, fixation of the cervix to the anterior pelvic wall from cicatricial contraction of the connective tissue between the uterus, bladder, and wall of the pelvis, was mentioned in § 71, p. 118. It may be the result of parametritis anterior or of gangrenous destruction of tissue, the latter having then generally led to utero-vesico-vaginal fistula also. When this anterior fixation of the cervix has taken place, the posterior situation of the normal attachments of the fundus uteri and the altered action of intra-abdominal pressure produce retroflexion of the uterus. One finds several cases of such anterior fixation in every important list of retroflexions, the origin of some being acute and puerperal, of others chronic and quite independent of childbed.

The case represented in figs. 54, 55, was particularly instructive, because the appearance and disappearance of the retroflexion was observed to coincide with that of anterior fixation.

Mrs. H. of J. aborted at the end of April, 1876, in the third month of pregnancy—the ovum having degenerated into an hydatid mole. The uterus lay in normal anteflexion. She afterwards had parametritis anterior sinistra, with a distinctly palpable exudation which on the 29th of May had shrunk to a short firm callous connecting the cervix uteri with the pelvic wall, the fundus lying in retroflexion backwards to the right. Figure 55, shows the result of the examination perpendicular to the plane of the pelvic inlet; fig. 54, the same in profile.

On June 15th, the resorption of the exudation was nearly complete. The vaginal portion again lay in the back of the pelvis, and the uterus was in normal anteflexion, its passive mobility from left to right being still somewhat limited.

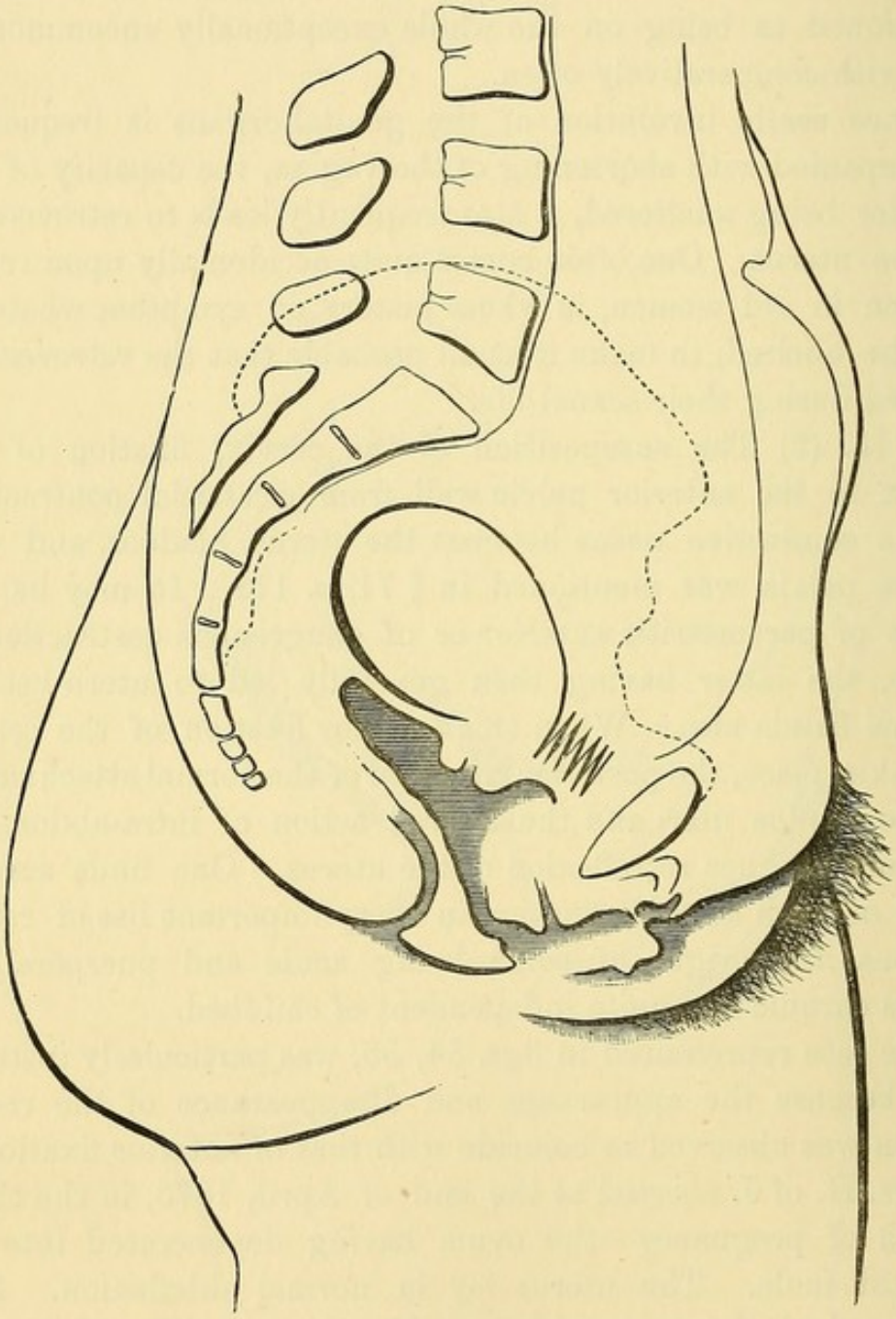


Fig. 54.—Retroflexion from anterior fixation of the cervix uteri.

§ 116. (3) Among the 134 retroversions contained in the table in Chapter II., Part 1, there are eight cases of posterior superior fixation of the cervix from extreme shortening of one of the folds of Douglas, the rigid uterus being at the same time

in retroversion. These cases bear such striking resemblance to each other, and are so very different from the retroversions usually met with, that they require some special consideration.

Their peculiarity consists in the posterior fixation of the cervix, and in the position of the uterus which is thereby elevated to such an extent that the fundus projects far above the true pelvis. Fig. 56 shows in profile the condition in one of these cases, that of Mrs. K. of J., 35 years old, 8 years married, sterile, anæmic, and suffering from intermittent dysmenorrhœa. The vaginal portion was much elevated; the cervix uteri in retroposition to the left was, from contraction of the fold of Douglas, in absolute fixation to the sacro-iliac articulation.

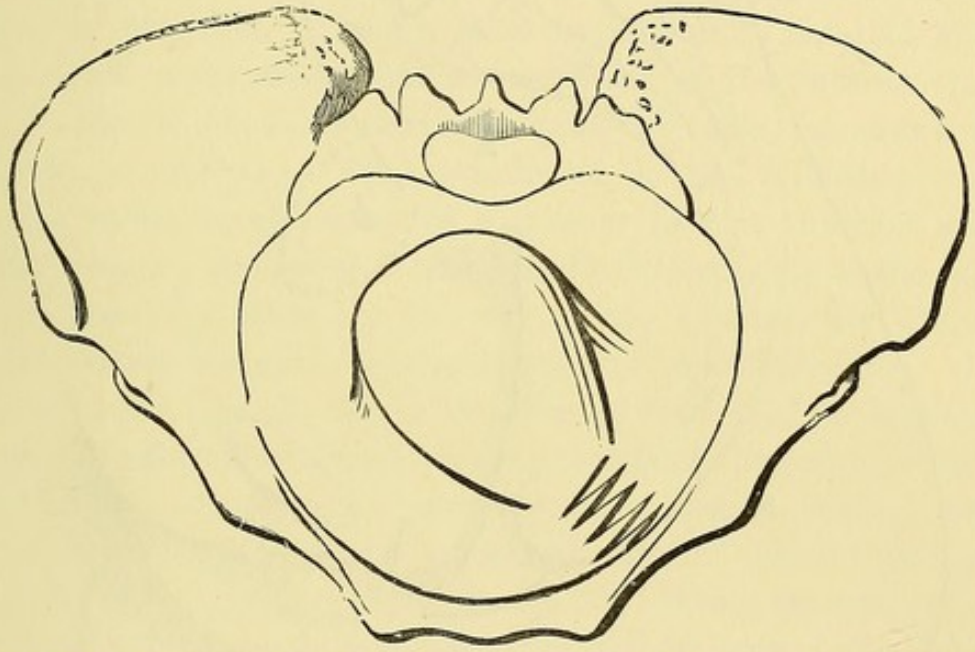


FIG. 55.—The same condition seen perpendicular to the plane of the pelvic inlet.

The corpus uteri, which was inflexible, lay in contact with the posterior wall of the pelvis and abdomen, close to the promontory; cavum uteri 7·5 cm. Under a course of resolvent treatment the chronic metritis diminished, the uterus became flexible, and the corpus uteri passed into acute anteflexion (fig. 56); the posterior fixation of the cervix to the sacro-iliac articulation remained unchanged.

While some of the other cases were still under observation, the posterior fixation yielded a little and the rigid uterus fell into anteversion. The position of the uterus in fig. 56, which is very peculiar, is due to the extremely rare combination of

the shortest possible fixation of the cervix with the extended shape of the uterus; the rigidity of the uterus prevents anteflexion, and the posterior fixation inhibits anteversion. The length of the vaginal portion in all these cases was consider-

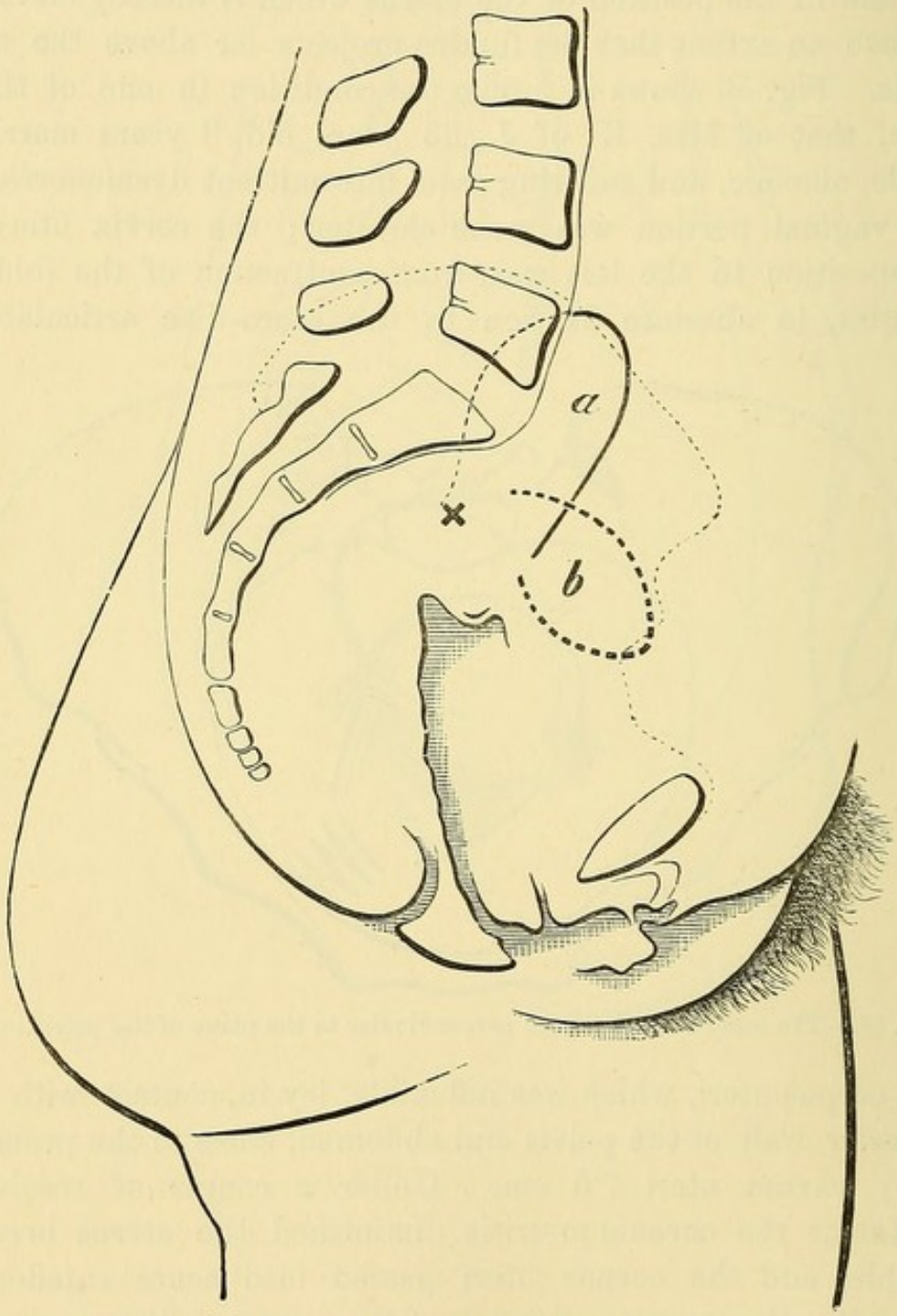


FIG. 56.—Retroversion of the uterus with posterior superior fixation of the cervix: subsequently acute anteflexion.

able, and was, in conjunction with the extremely short posterior fixation, a very great obstacle to anteversion.

§ 117. (4) The anatomical causes of retroflexion of the

fourth class depend on differences in the nutrition of the anterior and posterior uterine walls (cp. § 51, p. 95): they do not cause retroversion, but the angle of the flexion is always rigid. Shrinking of the posterior or lengthening of the anterior wall necessarily leads to an inclination or flexion of the organ over its posterior surface. Joseph Bell, indeed, drew attention to this cause of flexions long ago, and E. Martin, who ascribed to it effects far too extended, also laid great stress upon subinvolution of the seat of the attachment of the placenta to the anterior wall of the uterus, as a cause of retroflexion and retroversion.

To this cause he attributed the origin of 230 of the 338 retroversions and retroflexions of the unimpregnated uterus which he recorded. Though it is impossible to imagine how *retroversion* could arise from enlargement of the anterior wall of the uterus, *retroflexion* may, in some few cases, be shown to originate in that way. The retroflexion in the following case was due to the development of a tumour in the anterior wall of the uterus; the proof of the causal relation lying in the fact that a few days after the removal of the tumour, the uterus spontaneously resumed its normal position of anteflexion.

In Miss W. from J., who was suffering from profuse hæmorrhage, the uterus was found on examination to be enlarged and retroflected; on dilatation, an irregularly shaped tumour was discovered arising from the thickened anterior wall of the cervix and corpus uteri, as shown in fig. 57. When the tumour, a myxomatous adenoma, had been removed by means of a sharp curette and a spoon-forceps, the uterus diminished in size, its anterior wall became shorter, and in a few days it resumed its anteflected shape.

Fig. 57 represents the condition on January 2nd, 1879, the day before the tumour was removed; fig. 58 is the condition on the 29th of the same month. The tumour recurred as carcinoma and was removed by laparotomy after Freund's method, unfortunately with a fatal result.

§ 118. (5) Relaxation of the attachments of the uterus is by far the commonest of the anatomical causes which lead to the occurrence of retroversion and retroflexion. The punctual return of the uterus into a position of anteflexion every time

the bladder and rectum are emptied, depends upon the normal posterior fixation of the cervix by the folds of Douglas, in the first place, more than upon any of the other attachments of the

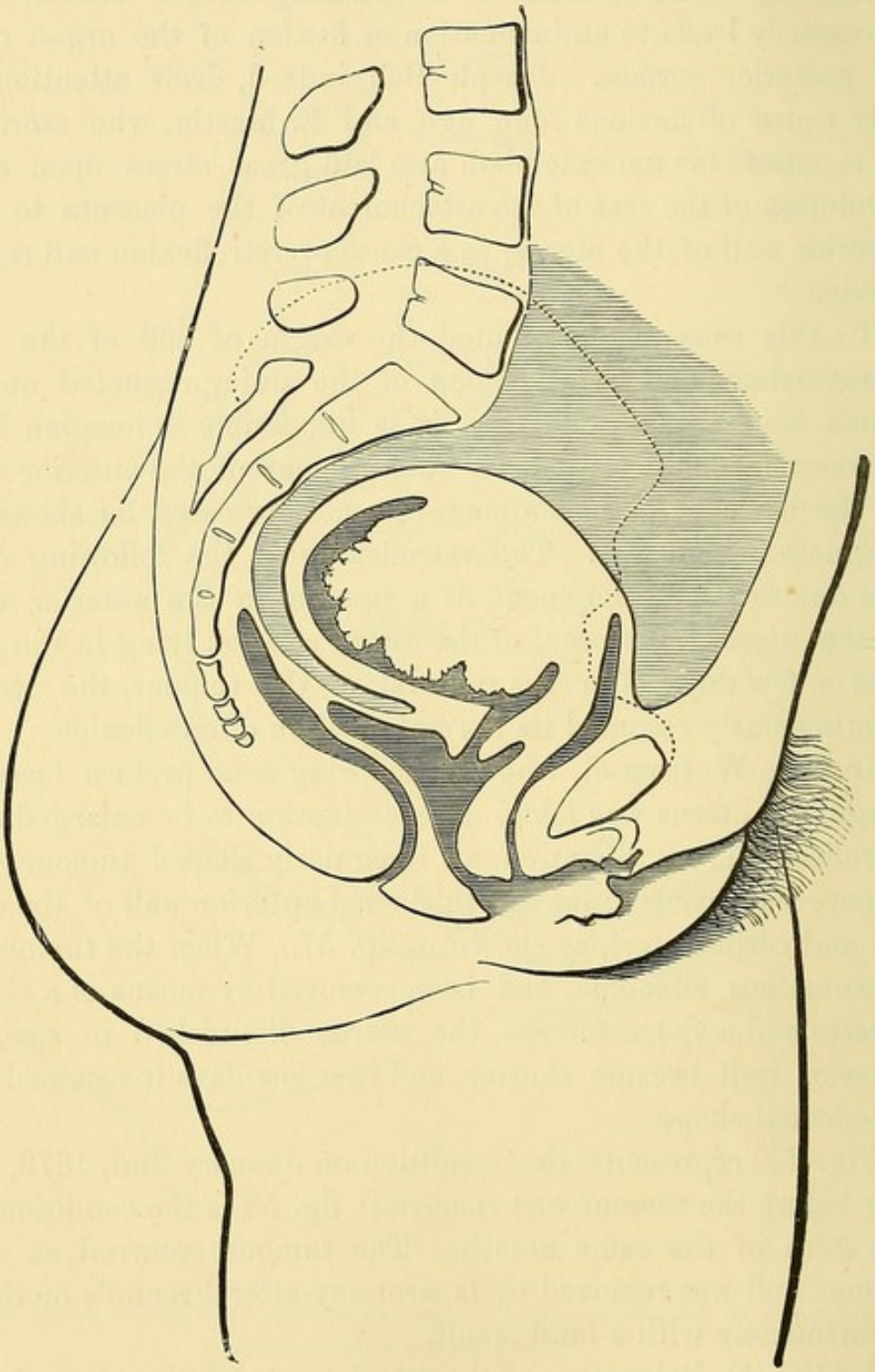


Fig. 57.—Retroflexion of the uterus from enlargement of the anterior wall.

uterus; next to this probably, upon the action of the round ligaments (cf. Chap. I., Part 1). It is pre-eminently in con-

sequence of the loss of this posterior fixation that positions of the uterus with the fundus backwards come about. If, after the evacuation of a large stool, the action of the muscular and

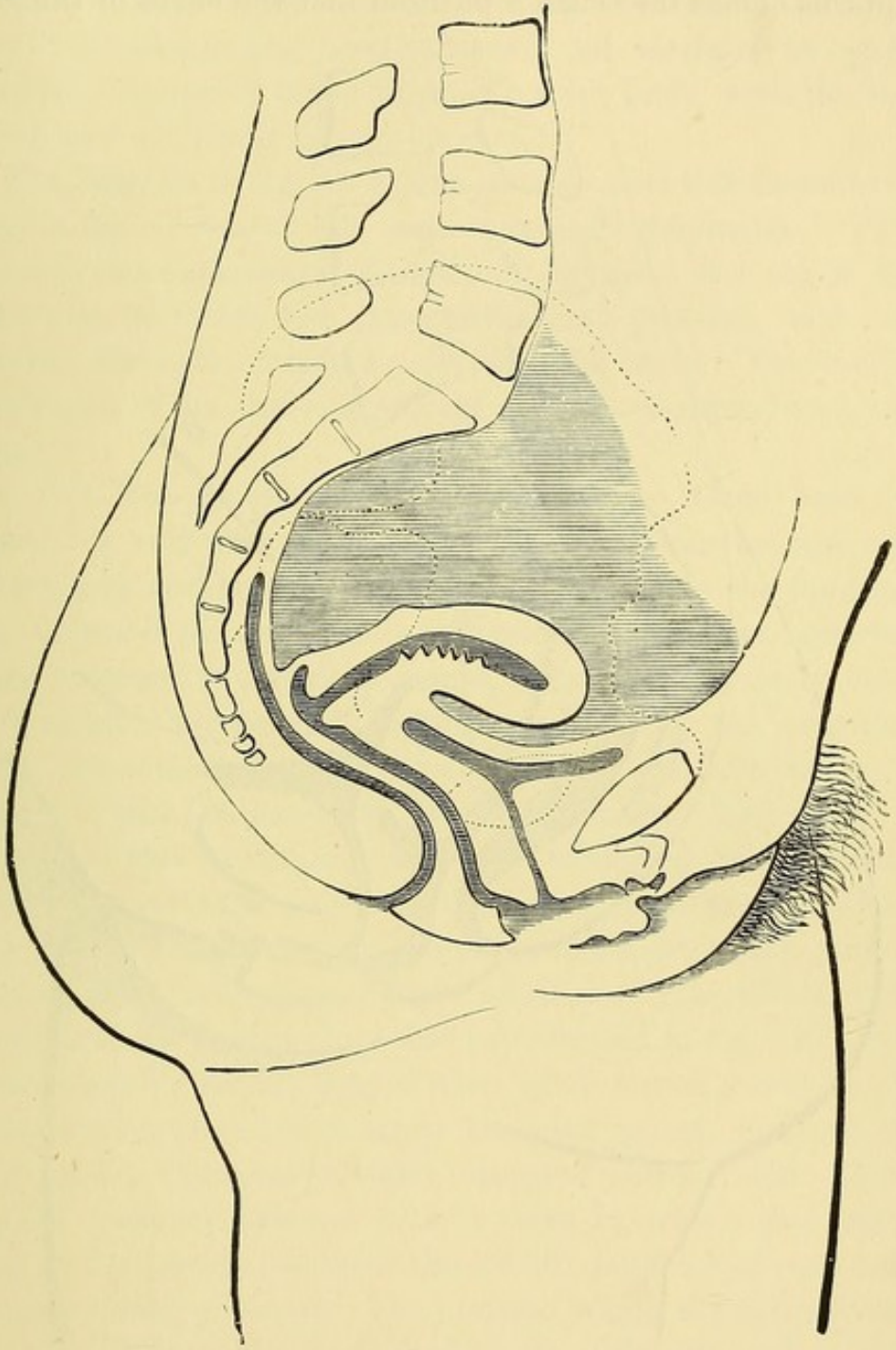


FIG. 58.—Restoration of the normal shape of the uterus, after the removal of the tumour.

elastic elements of the folds of Douglas does not come into play, the vaginal portion remains in the anterior part of the pelvis, and the bladder, the first time it becomes full, pushes the cor-

pus uteri backwards. Every succeeding distension of the bladder and rectum adds its own effect to that of the previous ones, so that after one or more evacuations of the urine and fæces, the uterus comes into such a position that the effect of the pres-

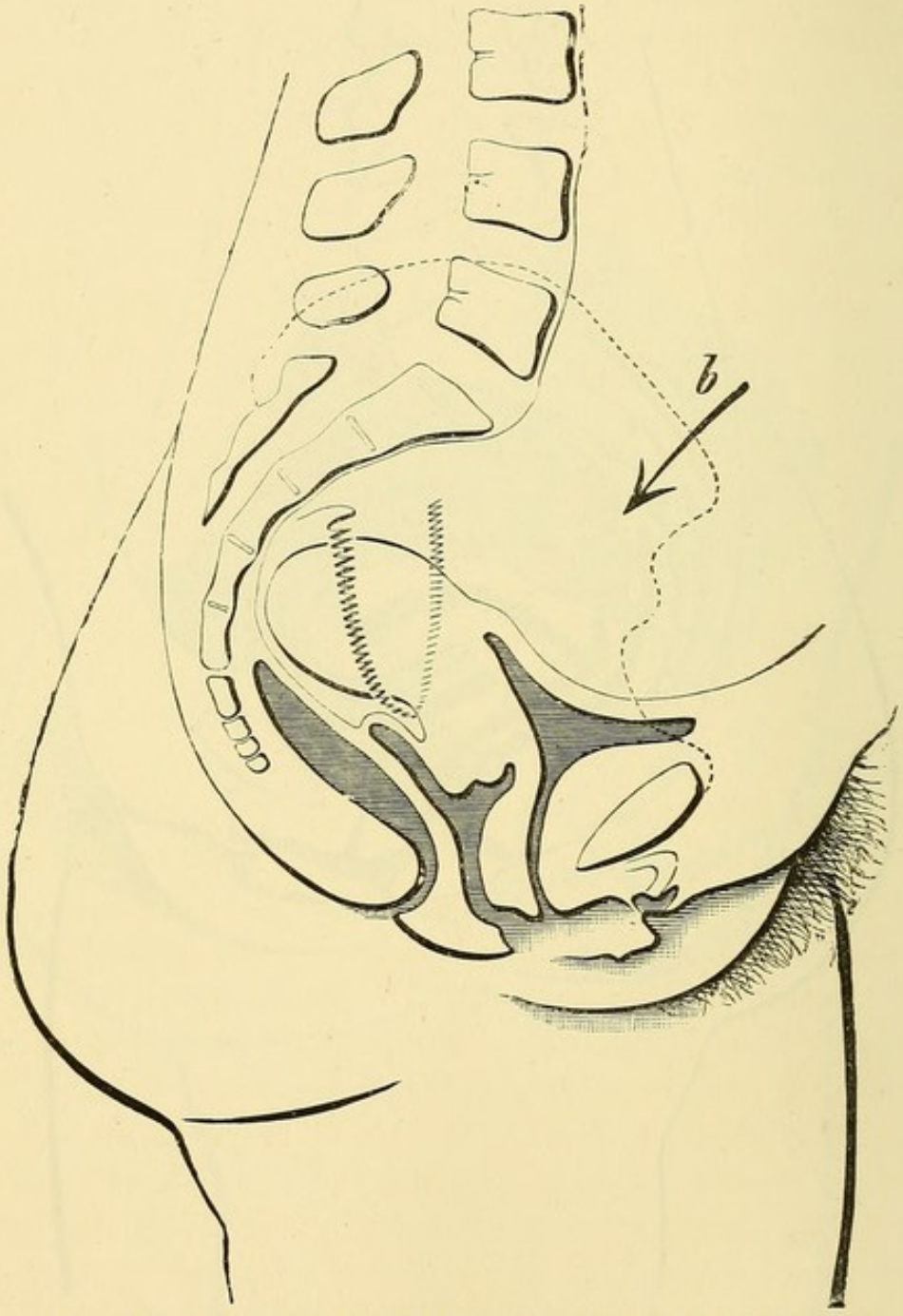


Fig. 59.—Relaxation of the folds of Douglas. Retroflexion of the uterus.

sure of the contents of the abdomen is greater on its anterior than on its posterior surface, and the fundus is forced into the hollow of the sacrum (fig. 59).

If the uterus is normally flexible, the cervix does not follow

this movement of the corpus uteri completely; as long as the preponderating weight of intra-abdominal pressure falls upon the posterior surface of the uterus, the anteflexion is maintained, directly it falls on the anterior surface, retroflexion takes place. But if the uterus has been stiffened out straight by previous metritis, the cervix must move as a solid body with the corpus uteri, and the result is retroversion.

The diagram in fig. 59 is an illustration of this retroflexion as that in fig. 47 was of the corresponding anteflexion. The indented line represents the folds of Douglas, the arrow *b*, the direction in which the intra-abdominal pressure acts on the uterus; the rest of the figure explains itself. The inevitable relaxation of the anterior vaginal wall is not reproduced in the figure.

§ 119. The position of the uterus, when it has been retroverted or retroflected, does not always at once become stabile. Fæces may accumulate underneath and elevate the fundus, and the uterus is far more easily influenced by its own gravitation when loosened in its attachments, than when normally secured. In a suitable position of the body, and during the cessation of intra-abdominal pressure, the anomalously movable uterus may even fall back occasionally into anteflexion. The organ may remain in this condition, repeatedly changing its position, for weeks or months, before it finally comes to rest in retroflexion.

§ 120. Flexion of the uterus over its posterior surface is seldom more acute than a right angle, but may attain a much more extreme degree than that represented in fig. 59. It is no doubt possible for the corpus uteri when forced down by intra-abdominal pressure to enlarge Douglas' pouch both in depth and width; the most extreme cases of retroversion and retroflexion, however, are met with in cases in which this pouch as well as the vagina has been abnormally lengthened and relaxed by *pre-existing prolapse*. The position which the uterus assumes after a prolapse has been unskilfully reduced, and a pessary stuck into the vagina, is generally retroflexion of this extreme character.

Fig. 60 represents a case of this kind, that of Mrs. H. of G., a woman 42 years of age, who had had several normal labours. From the time of her first confinement, a prolapse of the uterus

had gradually developed, had been replaced by some unskilled person, and afterwards kept up by a padded ring pessary. Years of profuse menstruation, caused by the retroflexion and uterine catarrh, at last induced her to seek medical advice.

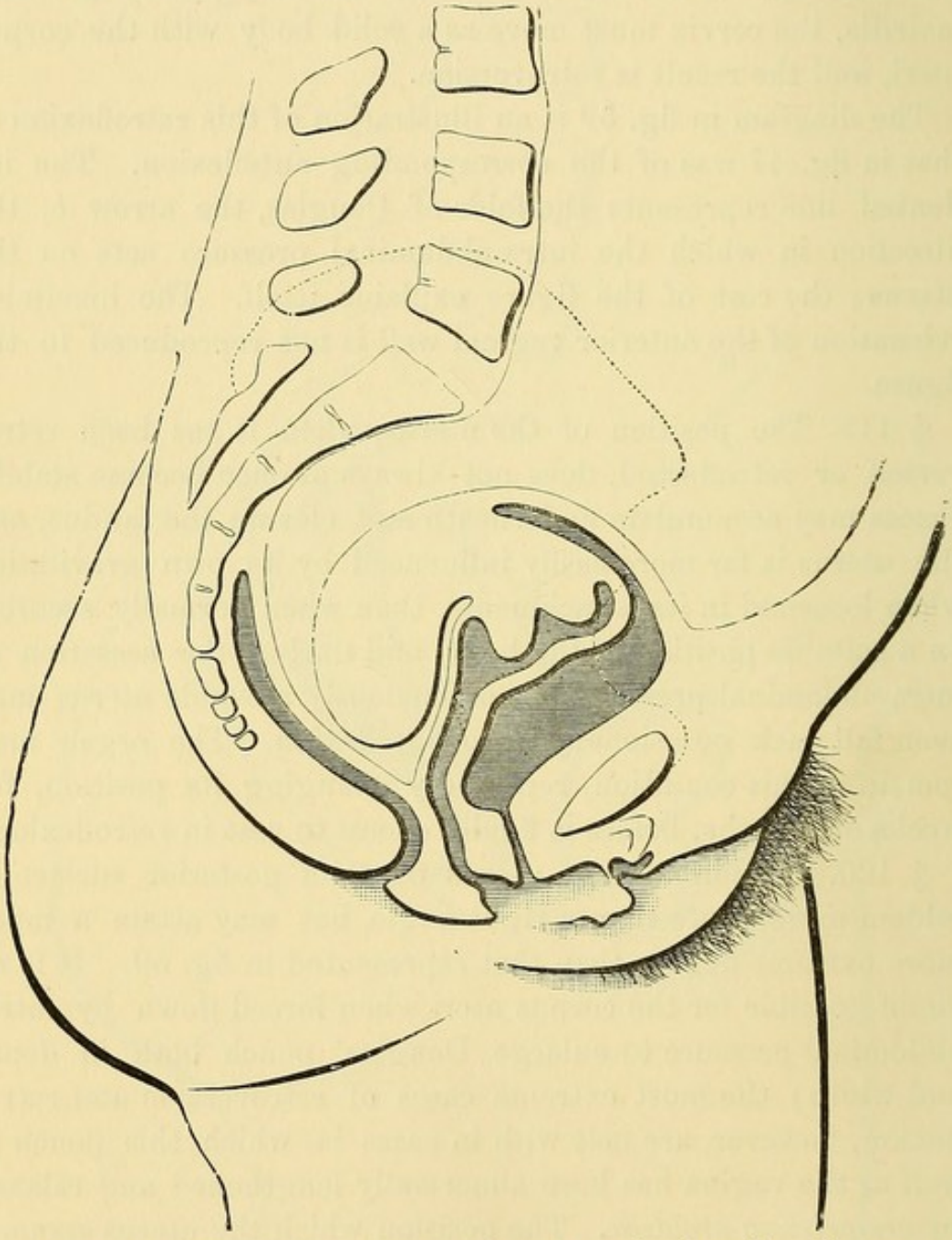


FIG. 60.—Extreme degree of retroversion of a previously prolapsed uterus.

Cases have been seen (by Rokitansky, Schott, and others) in which the posterior vaginal wall has become gangrenous under the pressure of a deeply retroflected fundus uteri, the naked peritoneal surface of which has been exposed to view through the wall of the vagina.

§ 121. The five different anatomical conditions which have been given as causes of the displacement of the fundus backwards, differ in regard to the frequency with which they result in retroversion or retroflexion. The one first mentioned, a puerile form of uterus with a short vagina, and senile atrophy in a like manner, causes in the first instance retroversion, and though the subsequent effect is very commonly retroflexion, it is with this particular form of retroversion that some slight degree of the original anteflexion not infrequently persists. The next condition mentioned (2) anterior fixation of the cervix, causes retroflexion only, while the third (3) can only produce retroversion, for directly the flexibility of the uterus is even partially restored, anteflexion supervenes on account of the high posterior fixation. The fourth cause (4) depends entirely upon the shape of the uterus, upon the shrinking of the posterior, or lengthening of the anterior wall, and leads to retroflexion. The fifth (5) may lead to retroversion or to retroflexion, but more commonly to the latter as in the majority of cases the normal flexibility of the uterus is preserved.

§ 122. We must now return to the consideration of the causes of relaxation of the folds of Douglas. Whether general muscular debility, poverty of blood, or over excitement of the genital nerves, can lead to relaxation of these folds, more especially of the musculus retractor uteri situated in them, is a question that we may leave undecided; the possibility of such a causal relation cannot be denied, its existence has not yet been proved.

The origin of very many retroflexions can be traced to some puerperal state, often indeed to one that was apparently normal, and frequently to an abortion as far as possible ignored by the woman herself. It may be doubted whether simply leaving the bed too soon can have any direct influence on the origin of retroflexion, in any case it cannot do so without the action of an habitually full bladder; otherwise the increased abdominal pressure and the free action of the gravitation of the uterus in the puerperal woman, in the upright posture, would rather favour the occurrence of excessive anteversion.

It is far more plausible to say that the maintenance of the dorso-horizontal position during the puerperal state, has a me-

chanical influence in promoting the occurrence of retroversion. The uterus is much more powerfully affected by gravitation when heavy in the puerperal state, than at other times. By the end of the first week after labour it has already become small enough to find room in the pelvis to lie with its fundus backwards, it is still about 500 grammes in weight, the virgin uterus being only from 30-50 grammes, and it is still as freely movable in all its pelvic attachments as it was when gravid. An additional factor of material importance is that intra-abdominal pressure, which under ordinary circumstances keeps the uterus in anteflexion in spite of the force of gravity even when the woman is on her back, is very slight in the same position during the puerperal state, on account of the relaxation of the abdominal walls.

The chief reason that any obstacle to the involution of the uterus promotes the occurrence of retroflexion, is that if there is any deficiency in the reconstruction of muscular tissue after childbed, the retractor uteri and round ligaments also come short and are therefore, while the uterus remains heavier than usual, less in a condition to replace it in normal anteflexion after every evacuation of the bladder and rectum.

§ 123. Another reason that retroversion so often comes on after a confinement, and one that is frequently capable of clinical demonstration, is the occurrence during childbed of parametritis posterior. Some mention has already been made in § 99, of the occurrence of slight attacks of local parametritis of short duration during the puerperal state. The result of these attacks is most commonly shortening of one or both of the folds of Douglas, a result which gives rise to no disturbance of function, and the patients are consequently released from treatment. If these patients, with parametritic shortening of the folds of Douglas, were kept under observation instead of being let out of sight, it would be found that while in some the posterior superior fixation of the uterus is maintained with the subsequent anteflexion of the uterus, the others, and those the very ones in whom the parametritis was slightest, are very soon affected with retroflexion of the uterus; the folds of Douglas having lost their elasticity and their contractibility from the effects of the parametritis, the uterus is deprived of even the

normal fixation of the cervix, and as soon as the stiffness caused by the exudation is removed by absorption the vaginal portion falls forward and, on the first distension of the bladder, intra-abdominal pressure forces the corpus uteri into the hollow of the sacrum.

§ 124. Parametritis posterior, even when not puerperal frequently leads to relaxation of the folds of Douglas, and consequent retroflexion. While treating an anteflexion due to parametritis posterior with remedies to promote resorption, as for example, by the daily application of a tampon of iodide of potassium, we may observe the shortened folds of Douglas becoming softer and longer. It sometimes happens in a case under daily observation during such a course of treatment, that the folds of Douglas having become completely relaxed, the uterus is some day found in retroversion or retroflexion instead of in anteflexion as on the previous one. (If the parametritis has not been of too long standing, the folds subsequently regain their normal elasticity).

This relaxation of Douglas folds, after previous attacks of parametritis posterior, often occurs spontaneously. This statement is proved by a condition very common in women coming under medical treatment for retroversion or retroflexion. The folds of Douglas, which in most cases of retroflexion are so very thin and relaxed, that it is only by a most careful digital examination per rectum that they can be made out at all, are sometimes found under the retroflected uterus forming broad hard ledges which are insensitive to tension or pressure, and pass away (on either side) in the form of a crescent, gradually disappearing towards the sacrum. Aran was quite aware of this condition which he explained as an hypertrophy of the folds of Douglas, the result of traction. My own explanation of it, as a condition remaining over from past parametritis and perimetritis posterior, may prove more correct. We can only wait for anatomical proofs.

Figure 61 represents very roughly the topographical relations of this condition. The indented line shows the loose but thickened folds of Douglas, which on digital palpation in the vagina or rectum, are found underneath the cervix, and passing on either side in a curve towards the sacrum. The uterus is

retroflected with some sinistrotorsion; the retroverted ovaries project, the right to half, the left to the whole of its length, into the Douglas pouch. The condition represented was one found on August 8th, 1877, in Mrs. H. of E., 30 years of age. The case was otherwise of no particular interest; the uterus was replaced the same day and permanently secured in the normal position by a figure of eight pessary.

§ 125. I must in conclusion point out the influence of which habitual *over distension of the rectum and bladder* may exercise in giving rise to retroversion and retroflexion of the uterus. Any considerable distension of the rectum must stretch the

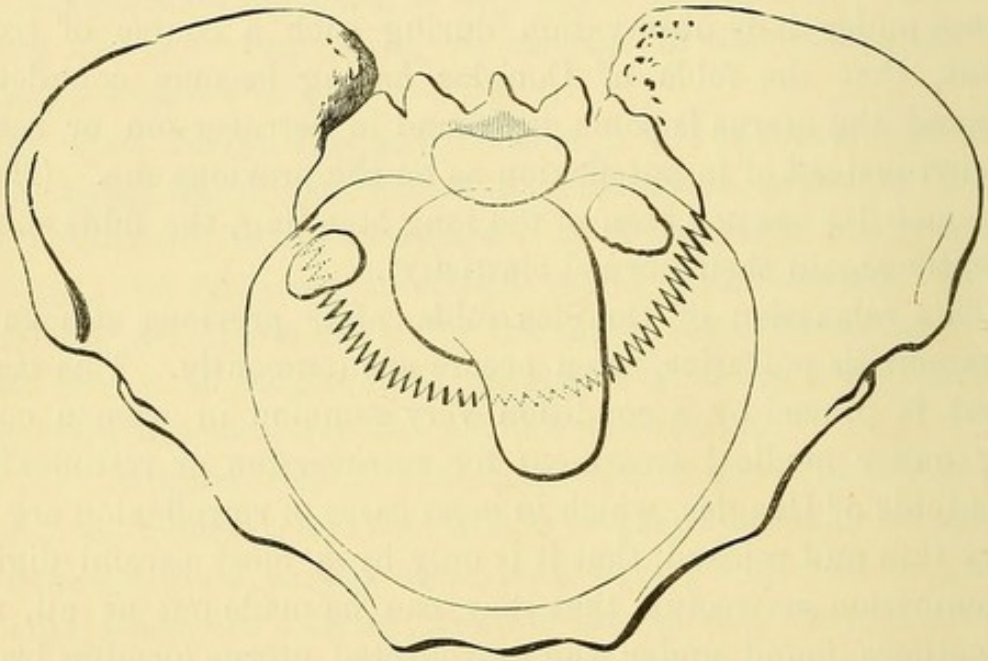


FIG. 61.—The folds of Douglas, thickened by past parametritis posterior, lying below the retroflected uterus.

folds of Douglas, and such stretching, if excessive and continous, is calculated to diminish and possibly destroy the elasticity and contractibility of those folds. It seems therefore probable that the habitual stagnation of a large mass of fæces in the rectum may lead to retroflexion of the uterus.

It is also very probable that habitual over-distension of the bladder, *i.e.* the habit of retaining the urine beyond the time when the desire to make water is first felt, favours in a high degree the occurrence of retroversion and retroflexion. I would ask my readers to refer to figures 6, 8 and 9, (pp. 15, 20, 21) in connection with the following short discussion.

During the contraction of the bladder in micturition, the walls fall together in such a way that that segment of the vesical wall which is attached to the cervix uteri, Fig. 2 *bc*, comes into contact with the segment attached to the vagina; that is to say, the folding over of the posterior wall necessitated by the discharge of all the water in the bladder, takes place normally at *b*, and and not at *c*, (v. Fig. 6). The portion of bladder wall invested by peritoneum, from *c* to *a* in fig. 8, is not in the contracted condition sufficient to cover the rest, and the walls therefore cannot fall completely together, nor the urine be all discharged, unless the part of the wall attached to the cervix uteri also turns over downwards as represented in fig. 6. The sinking together of the bladder in this way, every time it is emptied, is one of the factors which cause the prompt recurrence of anteversion.

Now it is known that by habit and practice the bladder becomes accustomed to hold a larger quantity of urine without the desire to make water coming on. In such habitual distension that part of the bladder wall which is only covered by peritoneum, takes a greater share than that which is attached to the uterus, vagina, and anterior pelvic wall. If, even when contracted or when imperfectly contracted, this segment covered with peritoneum (v. *a*, fig. 8.) is greater than the rest, as it is after great distension, it is then large enough when the bladder is completely empty to cover the rest of the vesical wall, including the segment *bc*, and the anteversion of the uterus when the bladder is emptied is therefore no longer necessary.

The position of the uterus may be proved to be affected in this way even by one single over-distension of the bladder. If the bladder of a woman is emptied by the catheter in the dorso-horizontal position when it contains a moderate quantity of water, say about 300 ccm., the uterus if normal at once passes into anteversion, but if the same bladder is emptied when it is twice as full, it will be found that the resulting anteversion is tardy and incomplete.

§ 126. *Complications.*—Retroversion and retroflexion of the uterus are frequently complicated by such conditions as catarrh with considerable swelling and loosening of the uterine mucous membrane, swelling of the lips of the os uteri, ectropium of the

mucous membrane of the cervix, particularly of the posterior lip of the os uteri, and engorgement of the numerous follicles round the orifice, enlargement of the uterus in the length and breadth of the cavity as well as in the thickness of its walls, retroversion

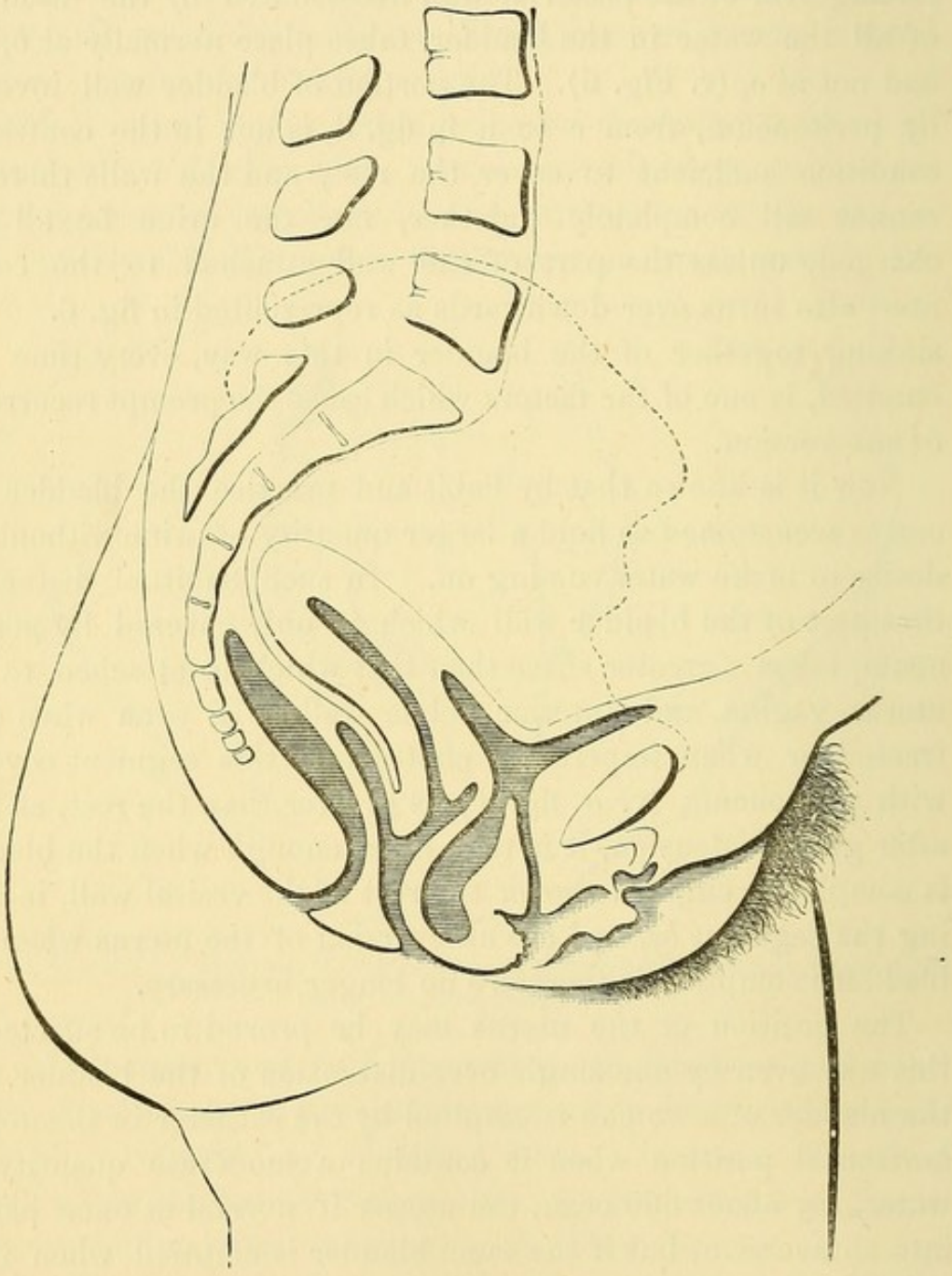


Fig. 62.—Retroflexion of the uterus with prolapse of anterior vaginal wall.

of the ovaries with swelling and tenderness (v. figs. 13, 14, 61), tenderness on pressure of the peritoneum investing Douglas pouch and the fundus uteri (*i.e.* of the peritoneal surfaces permanently in abnormal contact).

It is, moreover, extremely common for the uterus when retroverted, or only slightly retroflected, to offer the appearance of descent, that is to say the vaginal portion is frequently found remarkably near the introitus vaginæ. The upper part of the posterior wall of the vagina also often becomes inverted so that the posterior lip of the vaginal portion seems to be of extraordinary length, and the finger, without stretching the vagina, can be passed high up along the cervix and even on to the corpus uteri ; from the close approximation of its two extremities, the anterior wall of the vagina often bulges out like a pouch, and may reach nearly to or even beyond the vulva and thus form prolapse of the anterior vaginal wall. This pouch generally contains a hernia of the posterior vesical wall which is so closely united to the vagina. Fig. 62 represents such a condition. Vesical catarrh is of common occurrence.

Other complications, not so common, are flaky peritoneal adhesions of the corpus uteri to the anterior wall of the rectum, or cord-like bands fastening it to the pelvic wall, cicatricial contractions in the parametrium, and flexions of the ureters penning back the secretion and leading to the dilatation of the ureters, and of the pelves of the kidneys.

§ 127. *Symptoms.*—The symptoms of *acute retroversion* consist in an intense desire to go to stool and in symptoms of metritis peritonitis, and vesical irritation ; they may also be complicated by the effects, in other directions, of the force that caused the displacement. Unless the uterus is considerably enlarged by pregnancy, or some other cause, there are no positive symptoms of incarceration.

§ 128. The symptoms of *chronic retroversion and retroflexion* chiefly affect the genital functions. Menstruation becomes more profuse and recurs at shorter intervals, and that this is a direct result of the anomalous position of the uterus, is evident from the fact, that even after existing for many years this symptom generally disappears immediately the displacement is corrected. Such is at all events the case where there are no complications, provided that the reposition is carried out by the hand and not by the sound, and that the uterus is secured in position by a vaginal pessary. When the uterus has been retroflected for several years, this symptom often vanishes ; the

menstruation may even, in course of time, become scanty, partly in consequence of the general anæmia resulting from loss of blood and catarrh, partly from the shrinking of the uterine mucous membrane which is induced by catarrh of long-standing. In very many cases, however, the menstrual hæmorrhage continues to increase in severity in spite of the increasing anæmia and, as a result of the existing retroflexion, its periodical re-appearance is prolonged far beyond the age at which it would otherwise cease. The premature re-appearance of the menstrual discharge in nursing mothers also, is often caused by retroflexion of the uterus.

Conception, is not at first, one might perhaps say is never, directly interfered with by retroflexion. Indeed when the uterus is retroflected it is not unusual for conception to occur more frequently than would be possible under normal circumstances, because a premature interruption of pregnancy is favoured by the existence of the displacement. The results of treatment prove that retroflexion has a direct influence in this way. Women who up to that time have always aborted, carry to the full term after the uterus has been replaced and secured in the normal position.

Sterility does ultimately ensue in most cases of retroflexion, but is an indirect result due to the general debility, and more particularly to the anæmia caused by the loss of blood, to the uterine catarrh, seldom absent in protracted cases, or to the attacks of oöphoritis and peritonitis which nearly always complicate the course of cases of long-standing.

§ 129. Difficulty and pain in passing the urine and fæces are common, but by no means constant, symptoms of retroflexion. In chronic cases of retroflexion, there is generally some torsion also so that the cervix does not necessarily press on the urethra and neck of the bladder and the relaxed folds of Douglas, even although the uterus lies between them, may, from their extensibility, allow free passage to even very large masses of fæces. But the slight congestion, increase in volume, and peritoneal irritation, which in a retroflected uterus are so easily set up by fatigue of any sort that would be otherwise quite harmless, are constant sources of the frequent occurrence of fæcal and urinary troubles, and of painful bearing-down sensations in the pelvis.

What has just been said answers the question, formerly discussed, as to whether the causes of the symptoms commonly accompanying retroflexion, lie in the displacement itself or in its complications. The complications are most commonly the immediate causes of the symptoms, but these complications are consequences of the retroflexion.

§ 130. In retroflexion, the ovaries, necessarily displaced backwards by the displacement of the uterus, are generally the seat of painful sensations. This *retroversion of the ovaries* (neither descent nor prolapse is at all a proper term for the displacement in question *cp.* fig. 14) exposes them to movements of the intestines and even of the rectum, from the influence of which, in their normal position, they are entirely free. This exposure, and traction or torsion of their blood-vessels may account for the retroverted ovaries being generally very tender under pressure. The patients themselves often describe the pain they experience when the ovaries are submitted to pressure as of exactly the same character as that which they feel at stool, or without any cause at all.

The retroverted ovaries are very often also swollen, and the alteration in their tissue which is the basis of this swelling, is very important as regards the health of the patient; it is sometimes almost entirely due to mechanical interference with the circulation, as is quite plain from the way it disappears very soon after reposition. In other cases it depends upon inflammatory processes in the ovaries themselves, processes whose further course leads to sterility. The swelling of the ovaries existing with retroversion is, however, not infrequently the beginning of the formation of a tumour. The causal relation between retroflexion of the uterus and the occurrence of ovarian tumours has been already mentioned in § 56.

The ovaries, unless they have become adherent in their anomalous position, are replaced as a matter of course on reposition of the uterus. Not only do the causeless pains then disappear, but if a few days later, the ovaries are examined by palpation in their normal position, it will very often be ascertained that they have decreased in size, and are no longer tender under pressure.

§ 131. Hildebrandt reports a series of cases in which retro-

flexion of the uterus caused such flexion of the ureters as to bar, or at all events obstruct, the passage of the secretion. This is by no means common, but catarrhal affections of the upper parts of the urinary canals, and even nephritic attacks, occur far too often in women with retroflexion of the uterus, for us to think their association with the displacement accidental. Renal affections in women should always lead to the investigation of the position of the uterus.

Symptoms of pressure upon the nerves passing through the pelvis are also rather uncommon. Even when retroflexion is accompanied by nervous disorders of the lower extremities, such derangements seem to depend more frequently on inflammatory processes in the pelvic connective tissue, than upon the direct pressure of the uterus. Cases are, however, also met with in which the immediate cure of nervous disorders of long standing by reposition of the uterus, affords a proof that the pressure of the retroflected corpus uteri was the cause of the painful or paretic affection.

§ 132. The *diagnosis* of retroversion and retroflexion is decided by digital palpation. In the ordinary cases caused by relaxation of the folds of Douglas, the finger on vaginal examination, encounters the vaginal portion in the anterior part of the pelvis, and, through the posterior vaginal vault which is generally wide and loose, can feel the corpus uteri lying over backwards; the less the flexion, the more easily and distinctly can the corpus uteri be made out directly continuous with the cervix; the greater the flexion, the less perceptible to the finger in the vagina is the connection between the easily recognised cervix and the body which fills the posterior vaginal vault; absolute certainty in most cases is only attained by combined palpation of the abdomen with the other hand. We can ascertain by hypogastric palpation that the corpus uteri does not lie in anteposition in direct continuation with the cervix, and can feel the spot where the cervix bends over into the corpus uteri and, nearer to the sacrum, the surface of the corpus uteri that was previously anterior now bent over backwards; thus, with the other hand palpating in the vagina, we can assure ourselves that the tumour felt in the posterior vaginal vault is in reality nothing but the body of the retroflected uterus.

Figure 63 is given in illustration of what has been said of the palpation of the retroflected uterus. Once the uterus lies between the fingers palpating in the way there shown, no doubt can be left as to its position, size, shape, mobility, or tenderness. Absolute immobility of the uterus may make the diagnosis

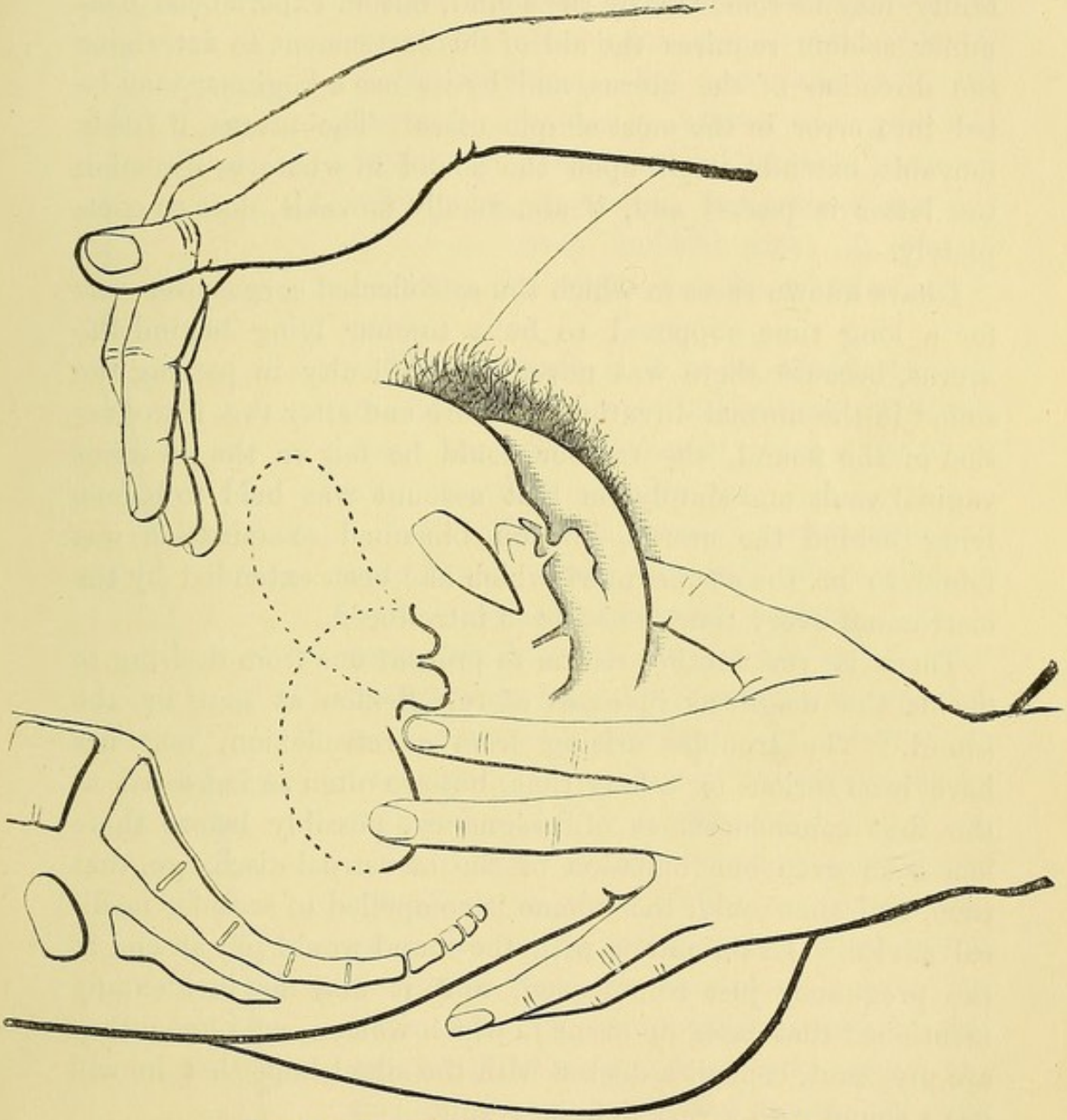


FIG. 63.—Diagnosis of retroflexion from anteposition.

difficult; excessive mobility of the corpus uteri upon the cervix may lead us to imagine that the case is one of a small uterus to which is attached a movable tumour. It is often very easy to make such a mistake with regard to a puerile uterus or one in a condition of senile involution.

The posterior surface of the uterus is more within the reach of the finger in the rectum. Great resistance of the abdominal walls to external palpation, may be overcome by chloroform narcosis. In doubtful cases, especially in those which are complicated by the presence of tumours, any remaining uncertainty may be removed by the sound, but an experienced examiner seldom requires the aid of this instrument to determine the direction of the uterus, and by its use a beginner may be led into error in the most simple cases. The uterus, if freely movable, extends itself upon the sound in whatever direction the latter is passed and, if abnormally movable, does so completely.

I have known cases in which the retroflected corpus uter was for a long time supposed to be a tumour lying behind the uterus, because there was never any difficulty in passing the sound in the normal direction. Before and after the introduction of the sound, the tumour could be felt in the posterior vaginal vault and simply on that account was held to be one lying behind the uterus, but on bimanual examination was found to be the corpus uteri which had been extended by the instrument every time it had been introduced.

There is yet another reason to prevent one from desiring to decide the diagnosis in cases of retroflexion at first by the sound. The troubles arising from a retroflexion, may not have been serious for a long time, but are often so increased at the first commencement of pregnancy, possibly before there has been even one omission of the menstrual discharge, that then, and then only, the woman is compelled to seek for medical advice. Examination with the sound would put an end to the pregnancy just commenced, and it may be incidentally mentioned that cases do occur in which women, who know they are pregnant, consult a doctor with the silent hope that he will use a sound with a very definite result.

The sound, though seldom required for the diagnosis of retroflexion, is frequently used for measuring the cavity of the uterus. The form of instrument best adapted for introduction into the retroflected uterus, is shown in the adjoining figure.

One does not in all cases of retroversion find the vaginal portion low down, nor even always far forward in the pelvis,

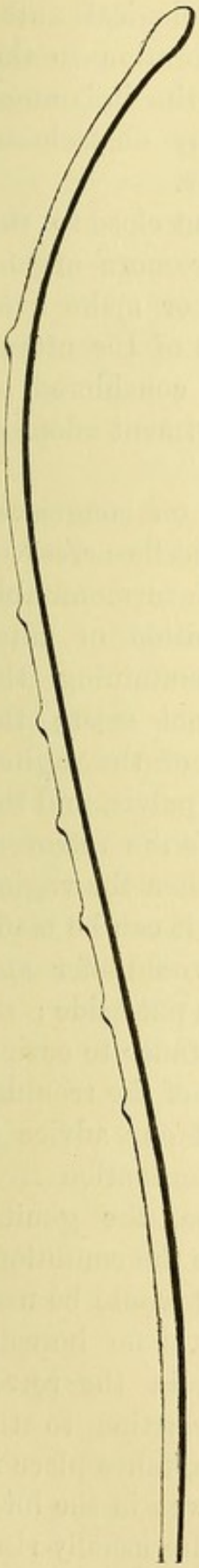


FIG. 64.

nor is the corpus uteri invariably to be felt in the posterior vaginal vault. A glance at figures 53-56, and 60 will suffice to show the manner in which, in order to lead to a knowledge of the shape and position of the uterus, the diagnostic manipulation in cases of retroversion due to other causes, must differ from that just described. Bimanual palpation is always the principal means of diagnosis; chloroform narcosis will make thorough exploration possible in almost every doubtful case; in case of necessity the sound may be of some assistance.

The diagnosis, if it is to afford material to decide the proper indications for treatment, must as a matter of course, extend to every existing complication.

§ 133. The treatment of retroversion and retroflexion must vary with the causes on which the displacement depends. It is upon the basis of our knowledge of these causes (inducing, and it may be active) that we have in each case to decide whether the anomaly in the position of the uterus can be removed, and if so in what way.

In addition to the inducing causes, any complications that may have supervened have also to be considered in determining the indications for treatment. Some of them, such as parametritic cicatrices and peritoneal adhesions, may form serious obstacles to the restoration of the normal position. The inflammatory complications of retroversion and retroflexion are for the most part *consequences* of the anomalous position, the relation in which they stand to the displacement is therefore essentially different from that in which the inflamma-

tory complications usually accompanying pathological anteflexion stand to the latter. In retroflexion, restoration to the normal position is the best treatment even for the inflammatory complications which, if they do not form any obstacle to the reposition of the uterus, often require no other.

Tumours, whether uterine or lying external but close to the retroflected uterus, generally give indications far more urgent than those offered by the retroflexion they cause or make irreducible. The disappearance of the retroflexion of the uterus after the removal of such a tumour, can only be considered as an accidental though very welcome result of treatment adopted on grounds independent of the displacement.

§ 134. *Indications.*—Retroversion depending on congenital shortness of the anterior vaginal wall, on puerile arrest of development (fig. 53), seldom offers any insurmountable obstacle to reduction of the uterus into a position of anteversion, but the necessary conditions for maintaining the reposed uterus with its fundus forwards, do not exist; the vagina does not afford enough room to admit of the vaginal portion being fixed sufficiently far back in the pelvis, and the ordinary distension of the bladder must restore the retroversion. Whether in such cases an attempt to lengthen the vagina by methodical extension, in the same way that it can be made wider by the hard rubber balls of Bozeman, would offer any prospect of success, is a question that must be put aside; we shall do better to confine ourselves in the first instance to curing the complications which are the immediate cause of the troubles for which we are consulted. For example, if our advice is sought for on account of sterility, and on examination it is found that, apart from their anomalous shape, the genital organs are sufficiently developed, we should make the conditions for conception as perfect as lies in our power. It would be useless to try and correct the retroversion which is no impediment to conception. Moreover, after conception in the retroverted or retroflected uterus, spontaneous reduction to the normal position, till after delivery at all events, takes place in far more cases than is generally supposed. Even in the form of retroversion we are now discussing, the fundus usually rises up out of the pelvis at the beginning of pregnancy without any

difficulty. The pregnancy has a favourable influence upon the anomaly on which the displacement depends and in several cases after the pregnancy has run its normal course, I have found that the vagina has become considerably larger; in one, the retroversion did not return, in others it was capable of correction by pessaries.

Retroversion of the uterus, when it comes on with the *senile involution* of the genital organs, is not as a rule accompanied by any trouble at all, and therefore only comes under treatment if it gives rise to prolapse either of the anterior vaginal wall or of the uterus.

In retroflexion from *fixation of the cervix to the anterior pelvic wall* (fig. 54, 55) the only treatment indicated is to promote as far as possible the complete resorption of the residua of parametritis.

In retroversion from *high posterior fixation of the cervix* (fig. 56), treatment of the metritis and parametritis posterior is indicated.

When retroflexion is caused by *elongation of the anterior wall of the uterus* (fig. 57), any cause that may still be in action will afford the indication for treatment; *e.g.* extirpation of a tumour in the anterior wall of the uterus.

Where retroflexion is caused by *shrinking of the posterior wall*, there may be indications for the direct mechanical treatment of the deformity, (*v.* § 146).

§ 135. Retroflexion caused by *relaxation of the folds of Douglas*, the commonest form of all, offers the most favourable prospects of successful treatment. The troubles arising, directly or indirectly, from this retroflexion are enormous, and spontaneous reduction of the uterus to the normal position can hardly be expected. On the approach of the climacteric age the troubles will probably diminish, and may more rarely completely disappear, but before that epoch a long time may have to elapse, during which the retroflexion and its consequences may have seriously and permanently injured the patient's constitution. We may generally expect that by means of suitable technical assistance the uterus, can sooner or later be reduced to its normal position, often very soon indeed, and it is only in the exceptional cases, to be presently described, that the

prospect of cure is slight. On the reduction of the uterus to the normal position, many of the troubles are at once removed, and the prospect of the cure of many others depending on the complications is very much improved, the inflammatory complications being for the most part, results of the retroflexion.

If the complaints of a patient to her physician point to chronic metritis of many years standing, and on examination a retroflexion of the uterus is found of the class above mentioned under (5), a class which includes at least nine-tenths of all cases of retroflexion, the prospect of her recovery is thereby, in my eyes, improved 50 per cent.; for an active cause for the metritis has been discovered, from which I am tolerably sure that it can be cured. This favourable prognosis is, I am well aware, opposed to the views taken by the great majority of medical men, indeed even of gynecologists, but is supported by the etiology of these retroflexions which has been already discussed, and by the successful results of treatment based upon the knowledge of that etiology.

§ 136. In that preliminary stage of retroflexion, in which the action of the folds of Douglas is not yet completely crippled, and in which the uterus is found on examination sometimes in retroflexion, sometimes in normal anteflexion, but always very movable, systematic stimulation of the uterus and rectum to contract, is often enough to restore the normal position of the organ. Cold baths, cold vaginal irrigation, and especially the use of cold clysters morning and evening and after each defæcation, that is to say after every time the folds of Douglas have been extended by the passage of a mass of fæces, may restore the normal action of these folds. The administration of ergot internally or subcutaneously also stimulates the uterus, and with it the retractor uteri, to energetic contraction, and the dilatation and subsequent washing out of the organ, a proceeding which is often otherwise indicated by the existence of uterine catarrh, does so in a very high degree. It must have been in cases of this kind that the daily introduction of the sound—a practice formerly very common—the retention of the sound in the uterus after elevation, and the use of intra-uterine pessaries, have resulted in perfect cure. The success also which has been attributed to the use of electricity, to massage, and to the

Swedish system of curative gymnastics, can be referred only to this primary stage of retroflexion.

The beneficial effect of any means employed to stimulate the activity of the muscular tissue of the uterus and folds of Douglas, will be materially assisted by preventing the organ from falling backwards, and by protecting the folds of Douglas from passive extension. This can be done by securing the vaginal portion in the back of the pelvis, by means of tampons or by a suitable pessary.

§ 137. The uterus if it has definitely taken up its position with the fundus in the hollow of the sacrum, must before anything else can be done, be liberated mechanically from this position. The retroflected uterus may be elevated by the sound, and vaginal pessaries have been employed with the intention of doing so; we can, however, bring the uterus into its normal position by bimanual palpation, and this last method is the only proper one.

The elevation of the uterus, in any case where it has been effected by the sound, might have been done far more easily by combined palpation with the fingers in the vagina or rectum and upon the abdominal walls; we can, and may without fear of doing any harm whatever, use far more force with the fingers in palpation, than it is possible to do with the sound without danger of very serious injury. We can, therefore, replace the uterus bimanually in many cases in which reposition by the sound would be impossible, but where reposition cannot be effected by skilful bimanual palpation, obstacles to it must exist that will never yield to the sound. By means of bimanual palpation we can find out these obstacles and employ against them, without any injury, an amount of force, that acquaints us not only with the fact that the displacement is irreducible, but also with the causes that make it so. Under similar circumstances any attempt to replace the uterus by the sound would injure the uterine mucous membrane, which as a rule is already in a morbid state, without even leading to the detection of the nature of the obstacles to reposition. A knowledge of these obstacles is, however, of great importance, not only in estimating the amount of force which may properly be used in attempting to replace the uterus, but also in determining the

indications for the removal of the immediate obstacles that still prevent reposition.

Reposition of the uterus by the introduction of a vaginal pessary has never existed except in theory, and indeed is founded on a false conception of the normal position of the uterus (*v.* fig. 15). One may perhaps, by the introduction of such a pessary, elevate the fundus up to the level of the promontory, and so diminish, but never remove, the retroversion or retroflexion. Little is gained, however, by decreasing the retroflexion; the intra-abdominal pressure continues to act on the anterior surface of the uterus, some accidental increase in this pressure forces the uterus into its previous position, and the pessary still lying underneath it, then only causes inconvenience.

To every one who from his own personal experience recognizes the advantage of bimanual palpation in diagnosis, the absolute superiority of the bimanual method of replacing the retroflected uterus over reposition by the sound will be evident without any further proof. It is therefore natural for us to find bimanual reposition of the uterus mentioned by those authors whom I have eulogized as having practised bimanual palpation between 1840 and 1850. The method is particularly described, chiefly for the puerperal uterus, by L. Joseph*, (i) who distinctly states that in Freund's policlinical institute at Breslau, the bimanual method exclusively had been employed for years for the elevation of the retroflected uterus, and that neither the sound, nor any other instrument, was ever used for that purpose. I laid down the same principle in the same year myself, founded on many years practice,† and I insert here some illustrations of the method of performing it which will be welcome to those less expert in it.

§ 138. Bimanual reposition of the uterus, vaginal and abdominal, is generally performed while the patient is in the dorso-horizontal position upon an ordinary straight couch, the index and middle fingers being introduced into the vagina. If the fingers cannot reach high enough in the vagina, they may be

* Die Retentionsblutungen von Dr. Ludwig Joseph, *Beiträge zur Geburtshülfe und Gynäkologie*, I. Berlin, 1872. Originalaufsätze, S 25.

† Ueber Versionen und Flexionen, speciell über die mechanishe Behandlung der Rückwärtslagerung der Gebärmutter. *Arch. f. Gynäkol.* iv., 1872. Ueber die Lageveränderungen der Gebärmutter. Volkman's *Vortr.* 50.

introduced into the rectum. Chloroform is generally required, and the patient must always be placed with her coccyx at the edge of a firm table or examination chair, so that the root of the hand may be conveniently depressed. Either in the relaxed posterior vaginal vault or in the rectum, the two fingers of the left hand are laid against the posterior surface of the uterus as near the fundus as possible and, the pressure being slowly increased, the corpus uteri is pushed upwards along the sacrum, and on one side of the promontory into the pelvic

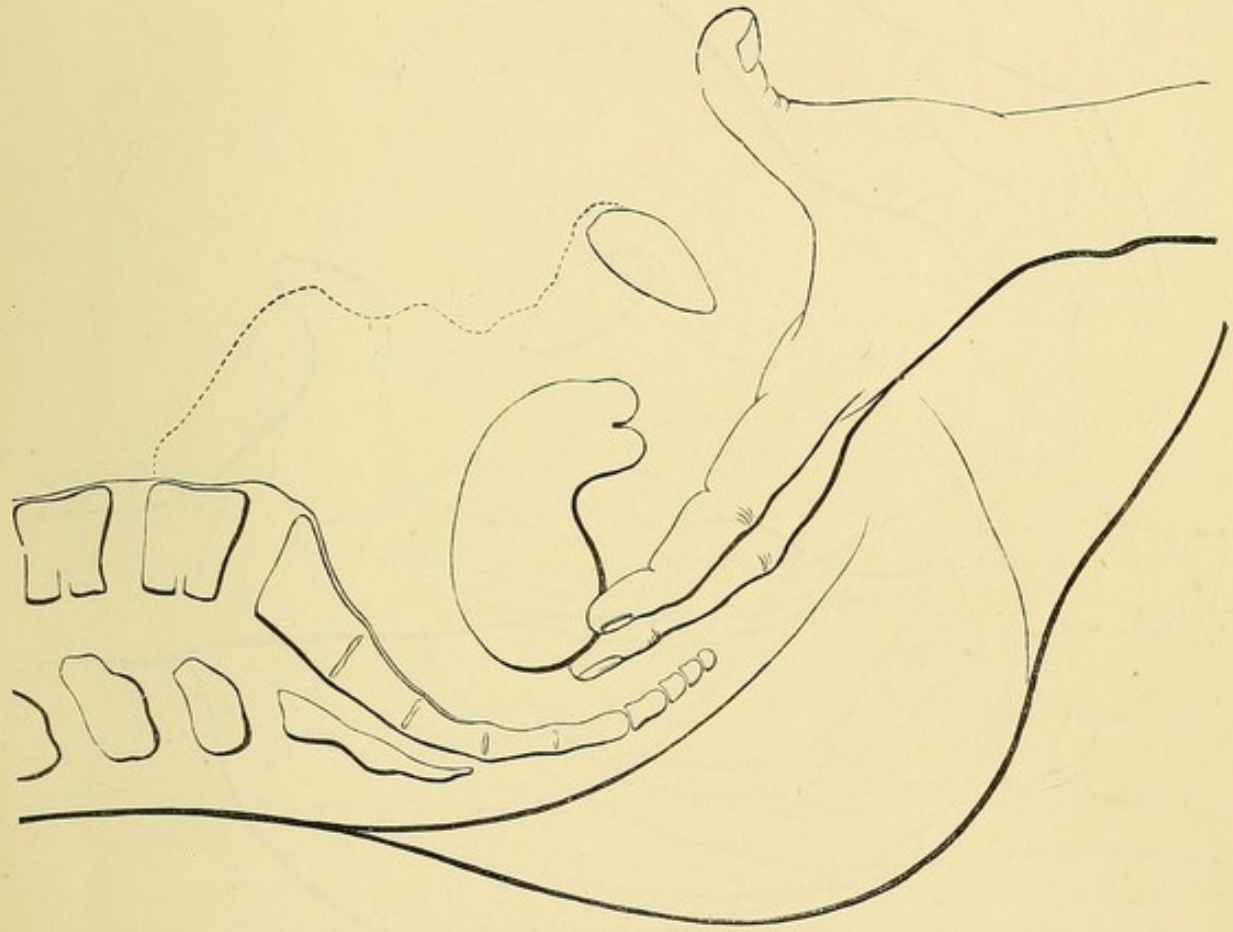


FIG. 65.—Reposition of the retroflected uterus.

inlet. The elevation is first attempted on that side of the pelvis in which the uterus is found; if the fundus lies on the sacrum, nearly in the median line, its lateral movability should be ascertained by placing one finger on the left side of it and the other on the right, and it should then be pushed up on that side towards which it is most easily moved. It is not at all unusual for the first elevation of the retroflected corpus uteri to cause some pain, but that should not interrupt the progress of

the operation, it being of course supposed, that an absolute diagnosis has been previously made. Any serious obstacle to reposition makes it necessary to postpone all further attempts till the nature of such obstacle has been ascertained under chloroform. Fig. 66 represents the exact point in the operation when the corpus uteri has just been lifted up into the pelvic inlet. The other hand, which up to this time has been

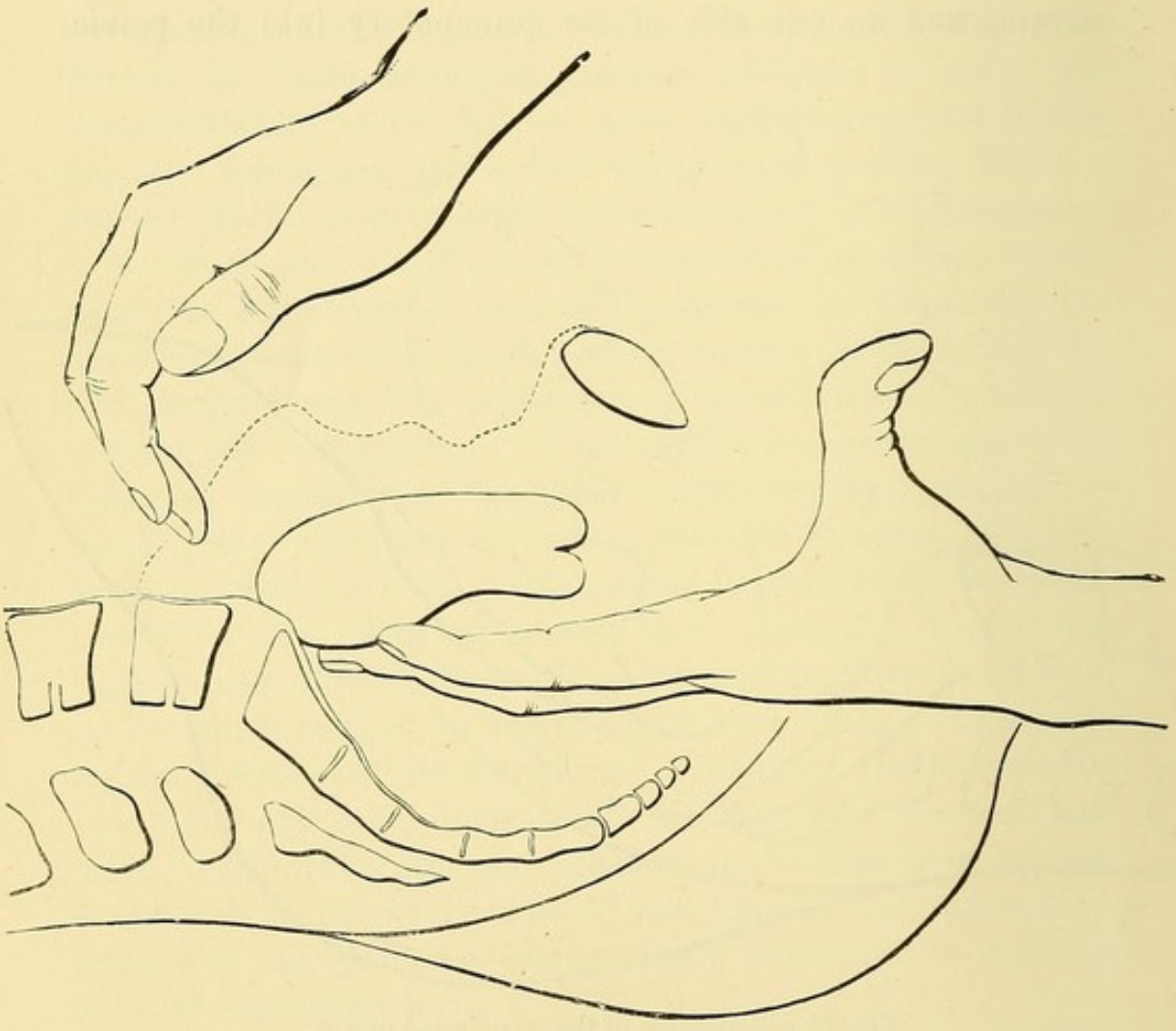


FIG. 66.—Bimanual reposition of the retroflected uterus.

waiting attentively on the abdomen, now comes into action, and takes charge of the fundus, which has been raised up towards it from the inside; and it is just in this part of the operation that great difficulties may be encountered. The vagina may not be long enough, to allow the fundus to be sufficiently elevated, or the fingers, even when in the rectum, may not reach far enough up; the integuments may be too

thick, or the abdominal walls may not be sufficiently relaxed, for the fingers to secure, although they can feel the uterus. Pressure on the vaginal portion in the direction *a*, Fig. 67, or if possible, when the uterus is very flexible, on the supra-vaginal portion in the direction *b*, is then of great help in bringing the fundus into a higher position. If the index and middle finger are in the vagina, the former, turned up over the vaginal portion, may apply this pressure, while the middle finger continues to push the fundus upwards. If the fingers



FIG. 67.—Bimanual reposition of the retroflected uterus: elevation of the fundus by the internal hand.

are in the rectum, the thumb may be introduced into the vagina, and can with much greater effect make the pressure at *b*, through the anterior vaginal vault; pressure at *b* however, is of course only required when the uterus is flexible. If the reposition is one of a rigid retroverted uterus, pressure at *a* is far more successful, and is in most cases quickly effective.

As soon as the finger tips of the external hand have been slipped behind the fundus uteri, as represented in fig. 68, the

most difficult part of the operation is over, and if the uterus can be replaced at all, there is no further obstacle in the way of bringing the fundus forwards as far as the symphysis. As soon as the external hand has got hold of the fundus, the fingers, which are acting internally, are taken away from the posterior wall of the uterus, and it is now their part to place the vaginal portion as far back in the pelvis as possible. In

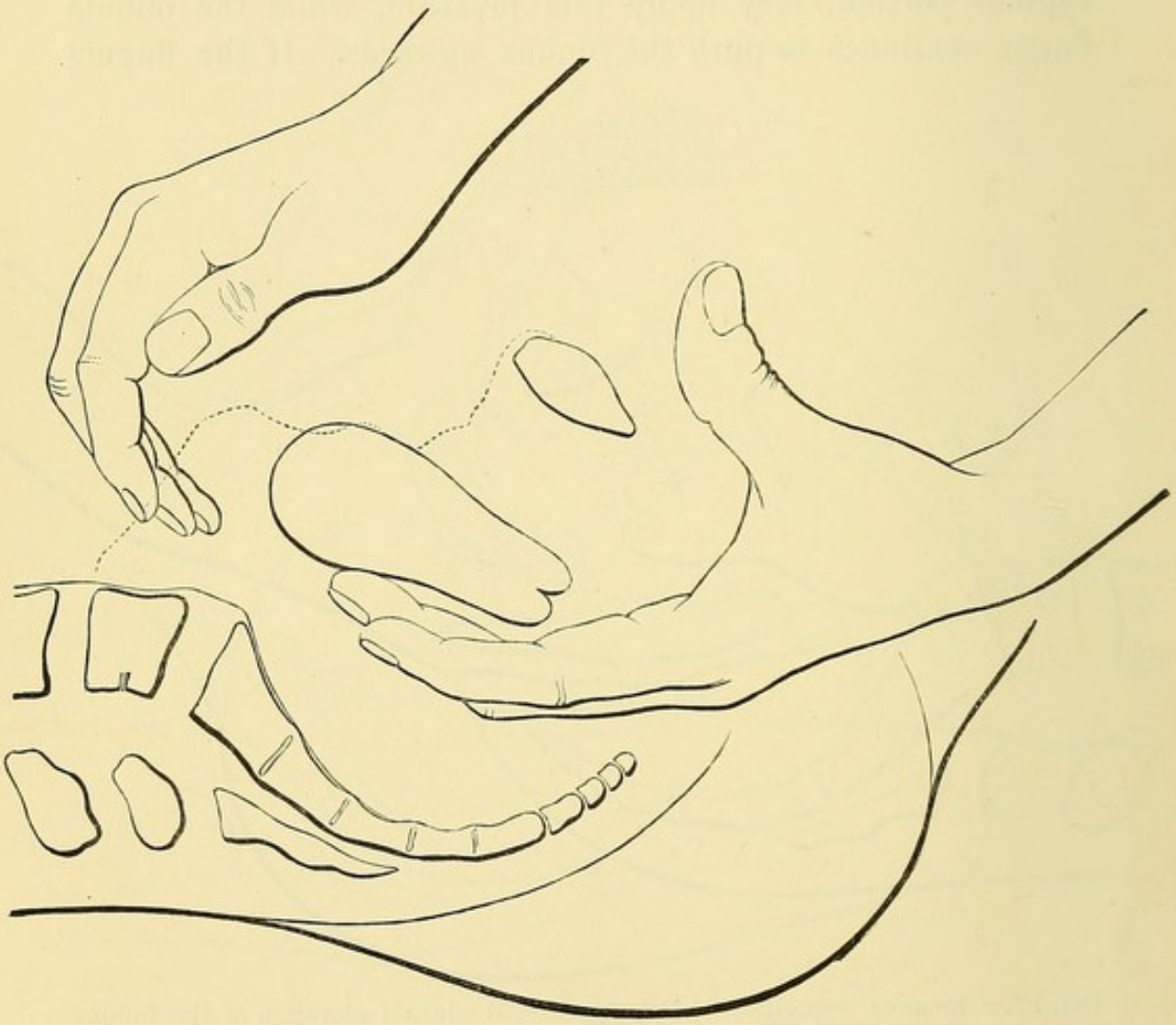


FIG. 68.—Bimanual reposition of the retroflexed uterus: the external hand taking charge of the fundus.

fig. 69 this has just been done; the finger tips of the right hand have brought the fundus forwards up to the symphysis, and while the middle finger of the left hand still fixes the vaginal portion backwards and upwards considerably above the level of its normal position, the index finger ascertains by palpation of the anterior vaginal vault, that the fundus uteri really is between it and the external hand.

§ 139. The obstacles that may stand in the way of the reposition of the uterus have been already considered. Even where no symptoms whatever of incarceration exist, and there is nothing to suggest that the uterus is adherent to the parietal peritoneum, the mere elevation of the uterus out of the pelvis

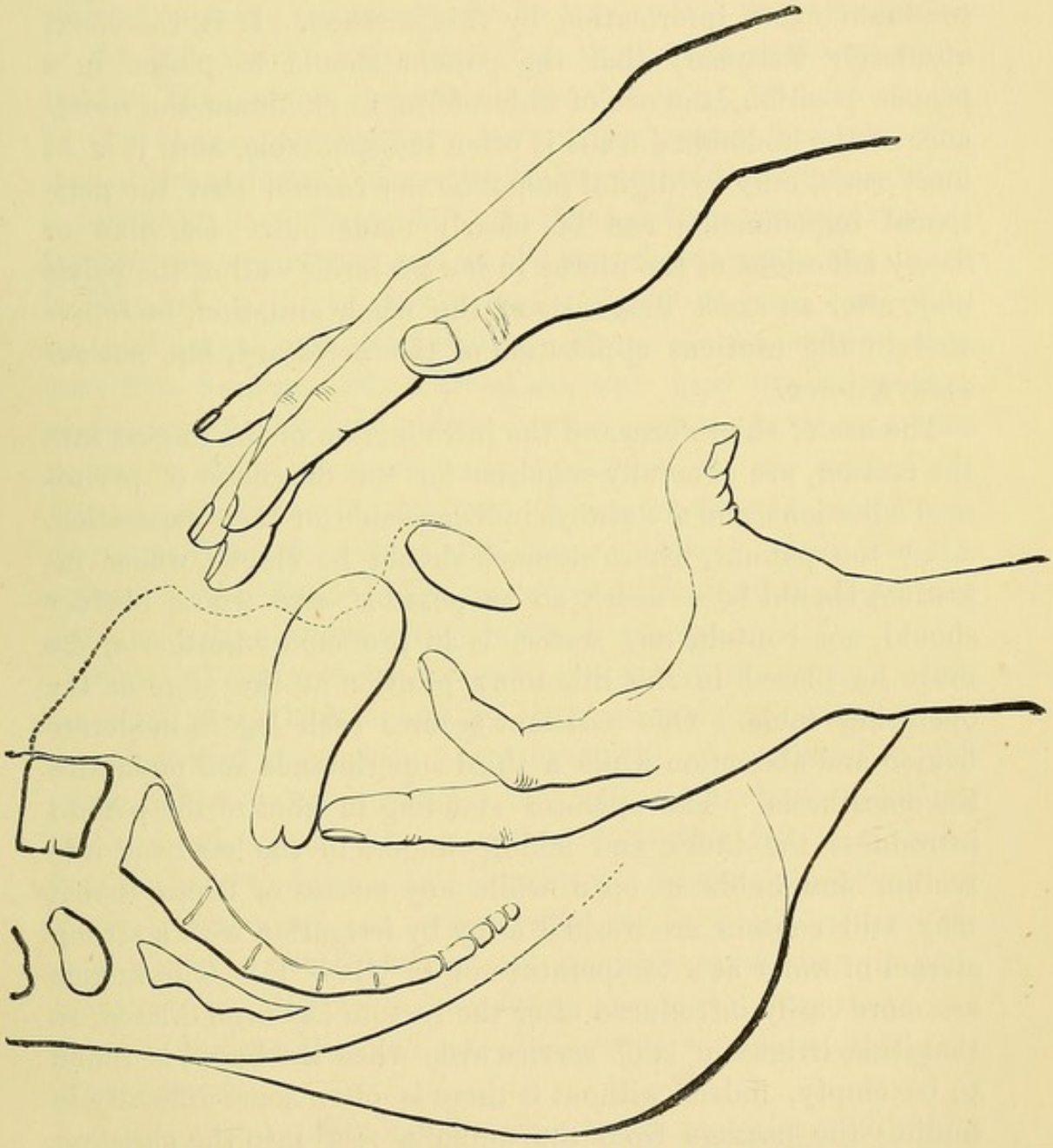


FIG. 69.—Bimanual reposition of the retroflected uterus, completed.

requires not infrequently the use of some force. It is therefore the more important to have an absolutely certain diagnosis that the tumour lying behind the cervix is the corpus uteri, before making any attempt at reposition. The most careful

bimanual palpation is necessary to make out precisely the hindrances to reposition offered by peritoneal adhesions, by shrinking of the peritoneum, or by parametritic cicatrices. On the other hand, the greater the impediments (resistance of the abdominal walls, distension of the bowels, and the like) that stand in the way of deep palpation, the more difficult is it to obtain exact information by this method. It is, therefore, absolutely necessary that the patient should be placed in a proper position, the use of chloroform to eliminate the resistance of the abdominal walls is often indispensable, and it is in most cases, only by digital palpation per rectum that the peritoneal impediments can be clearly made out. Cordlike or flakey adhesions of the uterus to the posterior wall of the pelvis may, after an exact diagnosis of the whole situation, be separated by the cautious application of the necessary, but not excessive, force.

The use of chloroform and the introduction of the fingers into the rectum, are generally required for the diagnosis of peritoneal adhesions, and are always indispensable for their separation. After the patient, whose stomach should be empty, whose intestines should be as nearly so as possible, and whose bladder should not contain any water, is in profound anæsthesia, she must be placed in the lithotomy position at the edge of the operating table. One assistant secures each leg in moderate flexion and abduction while a third superintends and maintains the anæsthesia. The operator standing in front of the patient introduces the index and middle fingers of the left hand into rectum and holds it open while any masses of fæces that it may still contain are washed away by irrigation with a strong stream of water at a temperature of 32° (104° F.) The fingers are more easily introduced after the rectum has been dilated, so that this irrigation is of service even when the bowel is found to be empty, indeed without it there is often some difficulty in finding the passage from the ampulla recti into the narrower part of the bowel that lies above the folds of Douglas; it is nevertheless necessary for the finger to reach far up above the isthmus which exists at this spot. After the fingers have passed this isthmus or, if the latter is very narrow, after one of them has done so, the operator setting his left foot upon a stool

placed close to him, supports his left elbow on his left knee. The assistance obtained in this way is very great, the arm is relieved from the strain of pushing up the perineum, the entire attention can be given, and the entire expenditure of force limited, to the skilful manipulation of the finger in the rectum. After thorough palpation of the corpus uteri and ovaries, in which a material advantage can be obtained by the introduction of the left thumb into the vagina, the fundus uteri is elevated by the left hand in the way represented in fig. 66. The right hand also now palpates down towards the organ from the surface of the abdomen, seizes the fundus and endeavours to bring it forwards, (figs. 68 and 69). In this passive movement the adhesions are sometimes put on the stretch as soon as the uterus is elevated at all, and always are so, sooner or later, according to their length and extensibility. Their course and insertion can then be accurately determined, and upon the knowledge so acquired, it can be decided whether they are to be separated or not. Flaky adhesions may be divided by the tips of the fingers, somewhat in the way that an adherent placenta is detached from the wall of the uterus; isolated cords may be seized by the finger in the rectum and, the fundus uteri being fixed, may be slowly broken by steady pressure.

Flaky adhesion of the uterus to the wall of the rectum, often no very great impediment to the temporary reposition of the uterus, is a most persistent obstacle to the maintenance of the organ in the normal position; the wall of the rectum follows the reposed uterus and the uterus afterwards follows the contracting rectum back to its old position. Cicatricial contractions of the peritoneum not infrequently act in a similar way, for even when inextensible they are moveable upon the sub-peritoneal tissue. We shall, therefore, have to return to these two troublesome conditions in considering the retention of the replaced uterus.

Adhesions of the tubes or ovaries to the posterior wall of the pelvis, demand the greatest circumspection. We can in such cases only employ a very gradually increased pressure; if at the first sitting this does not lead to the liberation of the uterus, and careful observation shows that the stretching is not followed by any reaction, it may, after renewed and more minute exa-

mination, be repeated eight or ten days later. Even in spite of such obstacles as these, patience and perseverance often lead to success.

In cases of exceptional difficulty, the method *of intra-uterine reposition*, described by me some time ago, has proved of great service both in the discovery and in the successful treatment of the obstacles to reposition. In this method, the finger used internally, instead of acting in the vaginal vault or rectum, is applied to the inner side of the fundus of the previously dilated uterus. Two fingers are introduced into the vagina, and one of them passed into the retroflected uterus as far as the fundus. This finger, and with it the uterus, is extended, its palmar surface having then been turned towards the anterior wall of the uterus, it is bent towards the surface of the abdomen. The strength and direction of any existing fixations may in this way be very accurately determined, and the force necessary to overcome them very correctly estimated. If the uterus can be brought forwards, the slightest anomaly in its peritoneal investment can hardly escape detection by the finger tips of the examiner, in a combined palpation from the inner surface of the fundus, and from the abdominal walls relaxed in narcosis. If the abdominal walls are very fat, or if the uterus is very firmly fixed, simultaneous palpation from the rectum and from the inner surface of the uterus may also be useful. The vaginal portion is fixed by a pair of forceps which are given into the charge of an assistant, and the fingers of one hand are introduced into the rectum. We can then practise the combined palpation from the inner surface of the uterus, with a finger of the other hand or, passing a sound with a knob of 12-15 mm. in diameter up to the fundus of the dilated uterus, and giving it to the charge of an assistant, we can from the rectum and surface of the abdomen palpate all round the organ.

After peritoneal adhesions have been separated in effecting a reposition, several days absolute rest in bed is required. During the first twenty-four hours, I also have icebags applied to the abdomen until it is evident that neither pain nor elevation of temperature is coming on. However, as I have never seen any distinct signs of peritonitis, and Erich, of Baltimore, who recently reported some cases of forcible separation of peri-

toneal adhesions, for the sake of the reposition of the retroflected uterus, never observed any consequent peritonitis although no ice was applied, I am quite willing to admit that in most cases the application of the icebag may be superfluous.

§ 140. Obstacles to reposition, which are situated not in the superficial layer of peritoneum but in the tissue underneath it, such as peritoneal contractions and callous, or parametritic cicatrices, do not admit of forcible correction. Acute parametritic processes, as a matter of course inhibit any attempt at reposition. In chronic parametritis, the treatment adopted must be mildly antiphlogistic and resolvent; two to three leeches applied to the vaginal portion at the beginning of the menstrual congestion, tepid sitz-baths, tampons of glycerine or iodide of potash, and the use of mild saline aperients. The longer it is since the processes which caused the contractions in the parametrium that constitute the obstacles to reposition passed away, the higher is the temperature that may be employed to promote if possible the resorption of any existing exudation. Prolonged sitz-baths at 30° to 35° R. (100° to 110° F.), peat-baths—preferably sitz-baths—up to 35° R., and sand-baths up to 45° R. (133° F.), have good effects. Cicatrices in the parametrium, even when so old as to be apparently quite incapable of reaction, may yield to systematic treatment of this sort, treatment which can be best carried out, with due attention to any other indications of the case, in the leisure of some watering place, such as Berka, Brückenau, Elster, Franzenbad, Kissingen, Köstritz, Landeck, Lobenstein, Marienbad or Steben.

The persistence of any anterior fixation generally renders any attempt at permanent reposition useless. Fixation when merely to one side or rather backwards prevents, it is true, the median retroposition of the vaginal portion, but as soon as it becomes sufficiently relaxed, allows not only the reposition but also the retention of the uterus in a nearly normal position, by means of one of the extra-median vaginal pessaries hereafter described.

§ 141. In acute retroflexion, and in cases of incarceration, the principal object of treatment is obtained with the complete reposition of the uterus, for the organ when released from imprisonment is prevented from relapsing into it by its own size. On the other hand, in the more usual form of chronic retroflexion

we are now speaking of, complete reposition is only the first indispensable step towards cure, and is useless if the remaining ones do not follow. The original cause of the retroflexion is still present in the relaxation of the folds of Douglas, and unless we provide some compensation for their lost action, the retroflexion recurs, generally within a few hours, from the same causes and in the same way that it arose the first time. (Compare § 118, fig. 119).

In cases that are quite recent and in which the retroflexion has not yet become permanent, (cf. § 119, § 136, pp. 195, 212) reposition frequently repeated, a prolonged horizontal position face downwards, or the retention of the sound in the uterus from time to time, may perhaps by stimulating the uterus and its muscular prolongations to contractions, ultimately have a successful result that can be obtained more easily and with less danger in another way; in retroflexions that have already become stabile, such proceedings are useless torture. The problem is, to prevent the cervix approaching the anterior pelvic wall, for as soon as it does so, intra-abdominal pressure necessarily forces the corpus uteri backwards again; to hit on some means that, after defæcation has displaced the cervix forwards, will compel it to move back again. Since we cannot apply to the uterus traction backwards and upwards, such as, under normal circumstances, the folds of Douglas exercise with the above effect, we must endeavour to compensate for the lost action of these folds, by a pressure from below backwards, that is in the direction of the vagina.

If the uterus has only occupied its abnormal position with the fundus backwards for a short time, and is still in that stage of abnormal mobility described in § 119, one may retain it in its proper position for twelve or twenty-four hours by a tampon of cotton-wool placed in the vagina below and in front of the cervix, but not extending behind the vaginal portion at all. When there is any indication for the local treatment of the mucous membrane, either of the vagina itself or of the vaginal portion, we may take the opportunity of applying it in this way. For the permanent retention of the uterus, special instruments, known as pessaries, are employed, specially designed for being left permanently in position.

§ 142. An immense number of different forms of pessaries have been recommended for the reposition and retention of the retroflexed uterus, and every year new forms of this instrument are brought out. The proper way, in my opinion, is to make a special pessary for each case; the individual requirements of all the forms of retroflexion being too manifold for an instrument suitable to every single one to be included in any collection of different shapes and sizes, however large. After many years experience I have found that, of the numerous ones I have tried, two only are well adapted to fulfil the chief indication above mentioned, *i.e.* to secure the cervix well back in the pelvis; the first is the figure of 8, the second the sledge-shaped pessary. Following out an idea promulgated by Marion Sims, I make these pessaries out of rings of soft copper wire covered with india rubber. These rings are about 7 or 8 mm. thick, the heaviest only 10 mm., and while flexible enough to be bent into the shape of a figure of 8 or of a sledge, without the use of any great force, must yet have enough resistance not to lose the shape imparted to them too easily, and therefore be strong enough to retain it during their introduction. Rings less than 7 cm. in diameter are hardly ever used, and any larger than 13 cm. but seldom. I always keep on hand a selection of them 6, 6·5, 7, 7·5, and so on, up to 14 cm. in diameter; those from 8·5 to 10 cm. in diameter are most useful for the figure of 8 pessaries, those from 10·5 to 12 cm. for the sledge-shaped instruments.

§ 143. The figure of 8 pessaries are the ones I employ most, and are the most beneficial when the vagina is not too relaxed and the resistance of the pelvic floor is nearly normal. They consist of a smaller superior, and a larger inferior loop, the latter being somewhat pointed below; seen in profile they are curved somewhat in the shape of an S. This curve varies greatly according to the requirements of each individual case.

Fig. 70 is a view of a figure of 8 pessary seen from the front, figs. 71—74 similar pessaries in profile, showing different degrees of the S shaped curve; the instruments are of medium size made of rings 9 cm. in diameter. The dotted line represents the axis of the uterus in the horizontal position so that the direction of the pessaries which are drawn in profile, corres-

ponds to their position in a woman standing upright. The smaller loop of the instrument goes round the vaginal portion and the resistance by which the cervix is prevented from passing too far forwards, and by which it is compelled to resume its posterior position in the pelvis after having had to leave it, is given by the place where the loops cross.

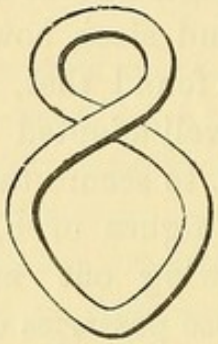


Fig. 70.

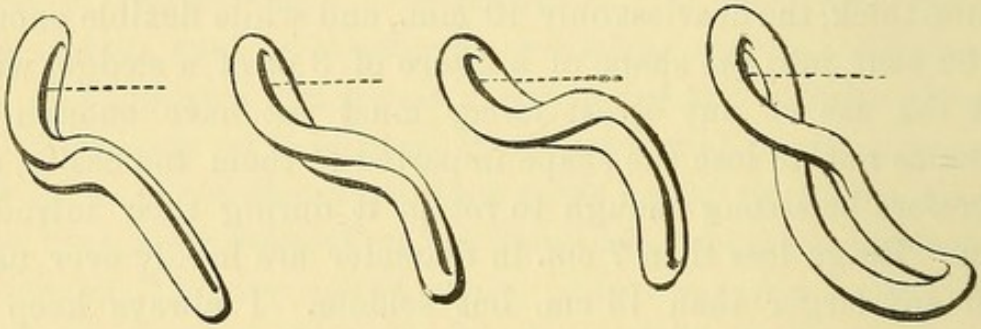


Fig. 71. Fig. 72. Fig. 73. Fig. 74.

Front and side views of figure of 8 pessaries.

The transverse dimensions of the lower loop must be so broad that forcible straining, though it may push the pessary downwards, will not force it out. The vaginal portion can, as it necessarily must each time a large motion is passed, move forwards, but only as a whole together with the pessary. The elasticity and contraction of the soft parts of the pelvic floor are substituted for the lost function of the folds of Douglas and with the help of the pessary, push the cervix back to the position into which, on the relaxation of intra-abdominal pressure, it used to be drawn by the action of these folds (v. Fig. 88).

In its normal movements, which depend principally on the variations in the distension of the bladder, the corpus uteri is not impeded by the pessary, but it cannot fall backwards once the instrument sets the cervix so far back, that even when the

bladder is full, the force of intra-abdominal pressure still acts upon the posterior surface of the uterus. To ensure this it is sometimes necessary, at first, to give the cervix a position much higher and further back than the one that normally belongs to it, a position which corresponds to pathological anteflexion from shortening of the folds of Douglas. If after being kept for some days or weeks in such excessive anteflexion, the uterus exhibits less tendency to fall into retroflexion, the very long pessary at first introduced may be replaced by a shorter one.

It is a primary condition for the efficiency of the figure of 8 pessary, that the vaginal portion should retain its position in the smaller loop of the instrument; an examination must therefore be made after the state of distention of the bladder and rectum has been changed. If it is then found that the vaginal portion has slipped over into the larger loop of the pessary, or is riding with the os upon the junction of the two loops, it is evident that the instrument does not completely answer its purpose, even if the corpus uteri be still in anteflexion. The pessary must give a firm support to the uterus at the insertion of the vaginal portion into the anterior vaginal vault. If it does not do so, the defect may, provided the instrument chosen is neither too large nor too small, be remedied by altering the form of the S curve, (cp. figs. 71—74). It sometimes takes great patience as well as some practice to hit on the proper shape for this curve. I recommend any beginner who has altered an instrument several times without hitting on the right shape, to straighten the S completely and recommence with a flat figure of 8, for it often happens that after many alterations the curve has become too complicated.

§ 144. If the vaginal portion always slips out to one side, separating the two shanks of the pessary from one another so that the upper one corresponds to the side towards which the deviation took place, is sometimes at once successful; the figure of 8 must of course, sometimes be made in a different way, the shank passing downwards from right to left being made the upper instead of the one passing downwards from left to right as in fig. 70.

The cause of this lateral deviation of the vaginal portion is

generally some inequality in the length, or in the rigidity, of the fixation of the cervix uteri in the pelvis. Either the whole uterus lies somewhat to one side of the pelvis, a condition which may be overlooked at the first examination, or some insignificant cicatricial band in the parametrium on one side, which is no impediment to the cervix temporarily assuming the median position, after some time drags it over to its own side. In such cases to keep the uterus in anteflexion the vaginal portion must be fixed back more towards that side on which the shortening exists, (in very exceptional cases, if the attachment is situated higher up as regards the uterus and further forwards as regards the pelvis, fixation in the reverse way may be necessary). This lateral fixation of the vaginal portion is managed by *an extra-median form of pessary.* Figs. 75 and 76 are examples of this kind of pessary for supporting a previously retroflected

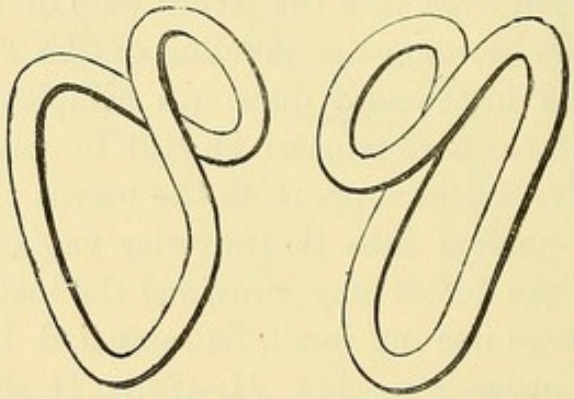


Fig. 75. Fig. 76.

uterus, Fig. 75 for left shorter, Fig. 76 for right shorter fixation of the cervix; a much slighter deviation from the median plane will of course often be sufficient.

§ 145. In some cases where reposition can be repeatedly performed without any difficulty, its effect is completely nullified and one's patience almost exhausted by the circumstance, that although the vaginal portion retains its proper position in the smaller loop of the pessary, the corpus uteri always turns back over it at an acute angle. The intra-abdominal pressure then again falls upon the anterior surface of the corpus uteri which it forces down into the back part of the pelvis; all the troubles of the retroflexion return and nothing is gained.

This circumstance may be due to various causes. The pelvis must be thoroughly examined over again by combined palpation

from the vagina rectum and abdominal walls in deep narcosis, and also, after previous dilatation, the whole of the walls and peritoneal surface of the uterus be thoroughly explored, by means of one finger inside it and the other hand on the abdomen. Some peritoneal adhesion of the uterus or of one of the ovaries, or some shortening of one of the broad ligaments, will very often give us the cause and with it the proper indication for the case.

But sometimes the most careful investigation has no result of the kind. The uterus can, during the narcosis, be easily placed in perfect anteversion and anteflexion, palpation of the organ, and all its surroundings, discloses nothing that can be made out as an impediment to reposition or retention, the vaginal portion is fixed well up backwards by the figure of 8 pessary, and nevertheless the very next day the corpus uteri is found lying back more or less deeply in the pelvis.

We must suppose it probable in such cases, that the cause of the persistent return of the retroflexion consists in contractions of the posterior wall of the uterus or of the peritoneal investment of this wall, or, if the deviation always takes place considerably towards one and the same side, in cicatricial contractions of the fold of peritoneum extending laterally from the uterus to the iliac fossa. By securing the vaginal portion as far backwards and upwards in the pelvis as ever the length of the vagina, without being excessively stretched, will allow, by means of a longer figure of 8 pessary, we may sometimes confine the action of the intra-abdominal pressure to the posterior surface of the uterus, this pressure is then often sufficient to adjust the retroflexion permanently, and after a time, a shorter pessary will be all that is required.

§ 146. In cases where this is impracticable, or is not permanently successful, *an intra-uterine stem* is a suitable addition to the vaginal pessary, provided that there is no active inflammation going on. After introducing an ivory stem reaching at least 2 cm. beyond the internal os uteri, I replace the uterus supported on the stem, by the bimanual method, which can be easily effected from the vagina without the use of chloroform, I then place the vaginal portion in the loop of a figure of 8 pessary adapted to the length of the vagina. The smaller loop of

this pessary must be large enough to allow the knob of the intra-uterine stem to pass through it without any difficulty. The stem and pessary are not in contact and the only connection between them is formed by the uterus itself. The stem lying in the uterus is supported on its broad base by the posterior vaginal wall; the pessary encircling the vaginal portion is supported by the floor of the pelvis.

Collateral injury is far less likely to arise from such a combination of the two instruments, in which each remains independent of the other, than from one in which they are united by any sort of joint. All that the vaginal pessary has to do is to retropose the vaginal portion; the uterine stem has only to straighten the angle in the uterus situated at the internal

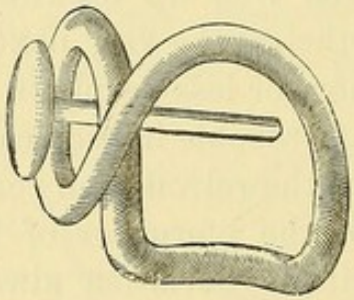


Fig. 77.

orifice. By it as by any intra-uterine pessary, the uterus is kept permanently straight, but remains freely moveable *in toto*, by the forces which normally affect its peritoneal surface. On the other hand no violence that the vaginal pessary may accidentally suffer, has any effect on the inner surface of the uterus.

I believe that if intra-uterine pessaries are to be used at all, this method of employing them, which I described as long ago as 1872,* is the most permissible, and as I then stated, cases of the class just mentioned are, in my opinion, the only ones in which, with our present knowledge of the normal and abnormal positions of the uterus, there can be any indication for their application.

The more cases of retroflexion I have to treat, the fewer are those in which I meet with this exceptional indication for the use of intra-uterine pessaries. Years have repeatedly passed without my coming across it, because in all cases of the sort

* *Archiv. f. Gyn.* Bd. iv.

coming under my observation, in which the circumstances were not such that I had for the time to abstain from reposition, either the peritoneal adhesions, which caused the anomalous position of the uterus, were discovered and removed, or the action of the parametric cicatrices could be compensated by vaginal pessaries of appropriate shape. During the latter half of the year 1880, however, three very old retroflexions came under my notice, in which, after the various obstacles to reposition had been removed, I could, after replacing the uterus, only secure it in its proper position by means of an intra-uterine stem, and this I did in all three cases with complete success.

In one of these cases, from the history of which it is probable that the uterus had been retroflected for eight years, it was subsequently ascertained by a gynecologist in another country, that the uterus retained its normal position after the stem had been removed. In another case, also one of long standing retroflexion and complicated by a small myoma of the posterior wall, the stem was removed by a foreign physician several months after its introduction, and the uterus fell back again into retroflexion; I replaced it more easily than on the former occasion, and it has been kept in normal anteflexion for several weeks during every sort of exertion, by the help of a figure of eight pessary without any stem. The third case, which was remarkable for a curious form of callous depending on parametritis and perimetritis, is the following one, that of Mrs. B., from B., in whom menstruation commencing at thirteen years of age was, with the exception of six months amenorrhœa during which she felt perfectly well, normal up to the age of twenty. Violent pains then came on at the catamenial periods, and soon became continuous during the intervals. She was married at twenty-one; menstruation at first very profuse, afterwards became more scanty, it reappeared every twenty-three days, but the interval on one occasion was five weeks, and was followed by copious hæmorrhage. The patient in the summer of 1880, was twenty-five years old; for the last three years she had suffered a great deal, and had generally been bed-ridden with violent pain. The uterus, on examination, was found to be fixed in retroflexion by cords which could be felt through the vaginal vault passing from the corpus uteri to the pelvis.

On October 20th, after a course of baths at Köstritz, the cords attaching the fundus uteri to the posterior wall of the pelvis were separated by hand under chloroform; the uterus was replaced and a figure of eight pessary introduced. An icebag was applied, and there was no sort of inflammatory reaction, but one hour only afterwards the uterus again lay in retroflexion. Reposition and modification of the shape of the pessary was repeatedly effected, but the retroflexion invariably recurred in a short time, although the vaginal portion lay properly in the loop of the pessary. A stenosis at the level of the inner os, through which the 2 mm. sound could only be passed in winding, was now for the first time dilated by laminaria and the beak dilator, and a very purulent catarrh of the corpus uteri found behind the stenosis was successfully treated. At the beginning of December she was again examined under chloroform and the uterus replaced; no cords left by peritonitis could then be found anywhere.

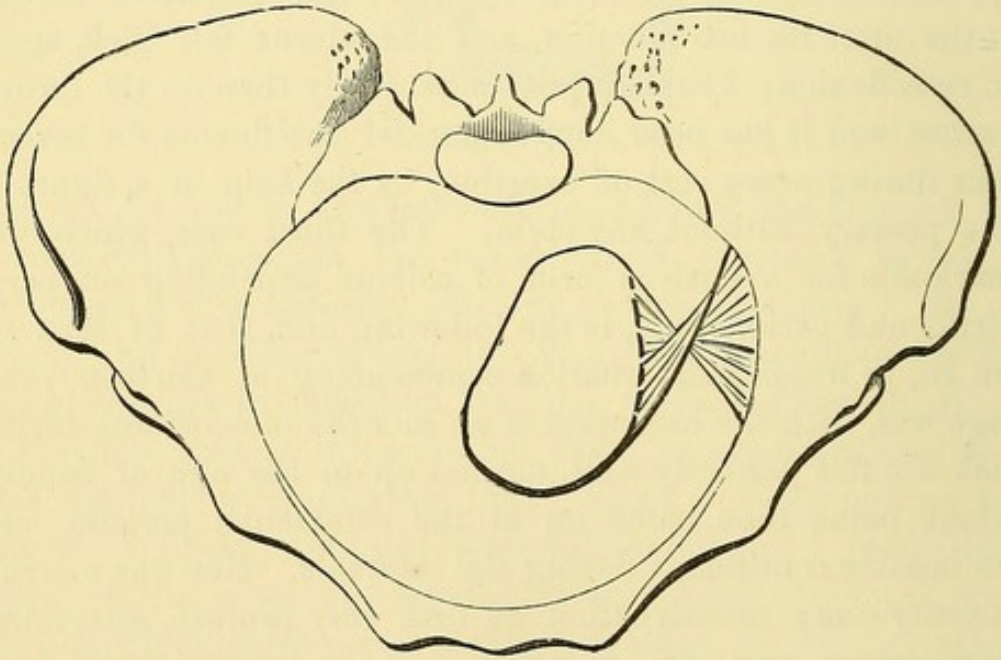


Fig. 78.—Cicatrix in the left broad ligament, a persistent obstacle to retention.

The obstacle to retention of the normal position proved to be a cicatrix existing in the left broad ligament. On bimanual palpation, the fibrous cords of this cicatrix were found so arranged, that while they were tolerably parallel when the uterus was in retroflexion, they crossed each other in such a way when reposition was carried out, that the cervix was

attached towards the front and the fundus towards the back of the left pelvic wall as is represented in fig. 78.

The vaginal pessary, even after being set much more out of the median plane than before this obstacle had been discovered, was not much more efficient; in twenty-four hours the uterus had fallen back into retroflexion. On the 8th of December, as the endometritis was proved to be cured by a test tampon, I introduced an ivory stem of 5 mm. diameter, replaced the uterus and secured the vaginal portion in the left side of the back of the pelvis by a figure of eight pessary. On one occasion afterwards, I removed stem and pessary for two days, the uterus fell at once into retroflexion; since then up to the present time, the end of May, stem and pessary have been retained. The patient has menstruated six times without any trouble worth mentioning; she can walk upstairs, is able to manage her rather laborious house-keeping, and feels better than she has done for five years.

§ 147. In women whose pelvic floor is either not firm enough to give sufficient support to a figure of eight pessary, or not elastic enough to push it back to its proper position after each defæcation, the sledge-shaped pessaries already described, made out of the rings of wire covered with rubber and similar to those recommended by Vulliet for the retention of the prolapsed uterus, are more likely to answer the purpose than figure of eight pessaries.

The varieties in the shape of the sledge pessaries required by the necessities of individual cases are as numerous as those of the figure of eight. The instrument consists of a long posterior bow which reaches to a greater or less extent up on the posterior wall of the pelvis, and whose ends rest on the pelvic floor, and a shorter bow in front, the end of which is turned backwards and keeps the vaginal portion in a position behind the middle of the cavity of the pelvis. Corresponding to the width of the vagina, the instrument must be broad enough to preserve a constant position after its introduction; if too broad it may do harm by stretching the walls of the vagina. The more the vagina is extended transversely the shorter it becomes in length, and unless it is sufficiently long it is impossible to replace the vaginal portion effectively. In conditions of the

vaginal wall which are distinguished by too great width, and which cause trouble by prolapse of the superfluous length of

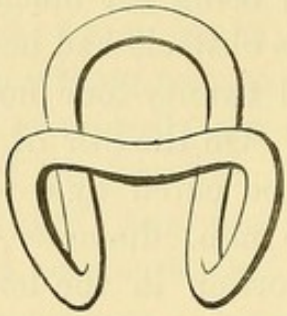


Fig. 79.

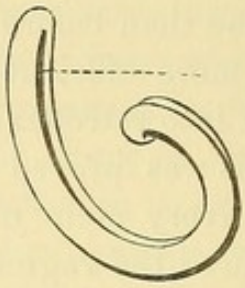


Fig. 80.

wall, the discomfort may be remedied by increased breadth of the instrument. Retroposition of the vaginal portion, when decided, always diminishes and often completely removes the prolapse of the anterior vaginal wall so often accompanying old retroversion; by increasing the breadth of the anterior bow this prolapse may be easily and completely cured.

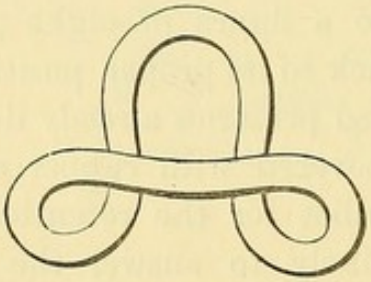


Fig. 81.

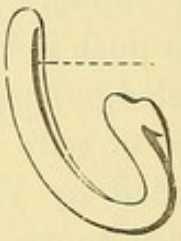


Fig. 82.

§ 148. The decision as to whether a figure of eight or a sledge-shaped pessary is the better adapted to any particular case, and the choice of the proper size of ring, require a certain degree of practice which is soon acquired; the shaping of the pessary to meet the necessities of each case, requires some manual dexterity. Marion Sims says that "the man who is not a mechanic, should never trust himself to use a pessary,"* a dictum which sounds rather discouraging. I myself believe that anyone who is able to replace a retroflected uterus in its normal position by the bimanual method illustrated in figures 65-69, can manage to make out of a rubber covered ring of wire a figure of eight or sledge-shaped pessary of a suitable

* *Clinical Notes*, 1866, p. 271.

shape, and can afterwards introduce it properly. Anyone who is unable to replace the uterus in its normal position, wants no pessary to retain it there, but may go on sticking some india-rubber ring or one of Hodge's pessaries under the somewhat elevated but still retroflected uterus.

It is a simple matter to give the proper shape to one of these rings, but I have been so often questioned about it by colleagues, and have found so many unsuitably shaped rings in different patients, that I believe it may be of assistance to many of my readers for me to describe the way in which I bend the rings myself.

The ring being supported on the third phalanges of the index and middle fingers of the left hand, I pass the index of the right hand into it in the opposite direction, lay hold of it with the second phalanx and draw it out into an oval shape, then, still keeping up constant tension, I place the thumb and middle finger of the right hand on the periphery of the ring in the way shown in fig. 83, and turn the right hand into extreme supination. A good figure of eight without any angles can be made in this way, and any other peculiarity in the shape required by the case under consideration is then easily added.

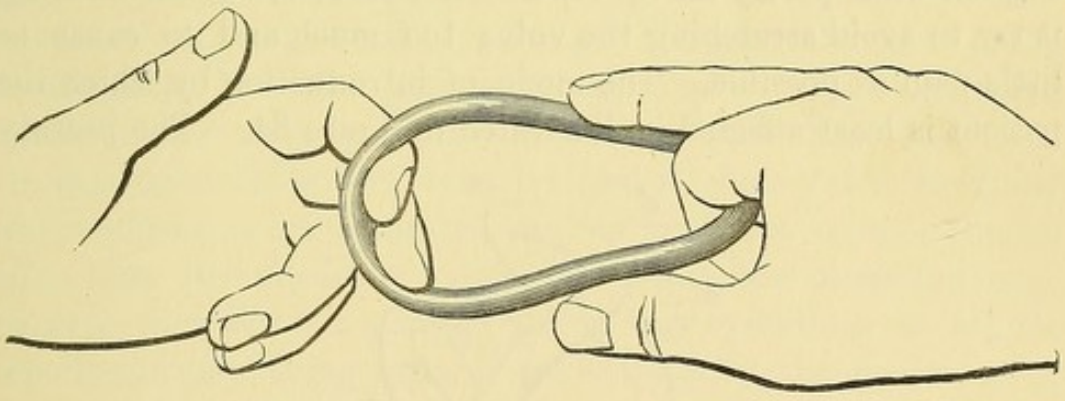


FIG. 83.—Manner of forming a figure of eight pessary.

In the first drawing I published of the figure of eight pessary,* there was a snout shown at the vulvar end of the instrument, which I have now given up for two reasons; in the first place as the patient cannot replace her own uterus she

* *Archiv. f. Gyn.*, S. 387-388.

must never try to reintroduce the instrument herself, this snout is therefore useless as a handle for her to extract it by; secondly, any pessary which protrudes from the vulva and keeps it open, gives the atmosphere free admission into the vagina, and is therefore injurious.

The sledge-shaped pessary is still simpler to make than the figure of eight. The ring is drawn out into a long oval, the anterior bow bent towards the posterior, and the particular shape given to each, that corresponds to the indications of the case.

§ 149. The introduction of the pessary is most easily effected when the patient is in the ordinary dorso-horizontal position. One finger is passed into the vagina and by it the pelvic floor is pressed back so that the opening of the vulva is made as long as possible. The figure of eight pessary, with the diameter that is to be afterwards transverse now in the median plane and the loop for the vaginal portion in advance, is passed in along the finger, and turned flat towards the uterus. It is of course afterwards ascertained that the uterus and pessary are in proper position.

The sledge-shaped pessary, *in situ*, will always keep the vaginal walls pretty far apart, we must therefore in introducing it try to avoid stretching the vulva too much and to cause as little pain as possible. The mode of introduction by which the patient is least affected is illustrated in figure 84. The pessary

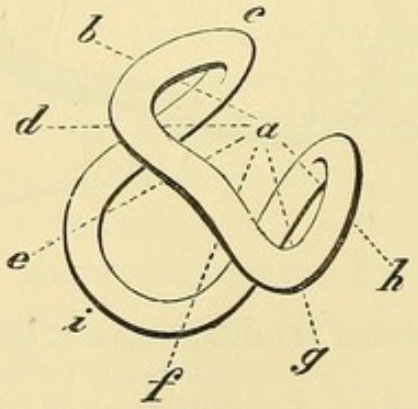


FIG. 84.

is held by the thumb, index, and middle finger of the right hand over *ah* and *ag*, and the index and middle fingers of the left hand pressing back the perineum and holding the vulva open, the loop *c* is first introduced into the vagina, directed

towards the left vaginal wall. The instrument is then pushed on by the right hand in such a way that the lines, *ab, ad, ae, af, ag, ah,* successively pass through the vulva into the vagina. During the whole operation care must be taken to press back that part intended for the posterior pelvic wall, so that the loop *i* comes from the first to lie behind the vaginal portion, for after the pessary is introduced, the direction of the axis of the uterus should almost correspond with the dotted horizontal line in figures 80 and 82.

Figs. 85 and 86 show the sledge-shaped pessary in position in the pelvis. In fig. 85, a median section of the pelvis, the pessary is not cut through. The bladder, which has plenty of free playroom between the widely separated lateral loops of the pessary, is shown reaching somewhat behind them; the transverse part of the anterior loop prevents the vaginal portion coming too far forwards, whether the bladder be full or empty, and thereby ensures the action of intra-abdominal pressure falling on the posterior surface of the uterus.

§ 150. It is most desirable that directly reposition has been successfully effected, a pessary should be at once introduced which will secure the uterus in its normal position. This is not only to spare both the patient and physician the unnecessary repetition of a proceeding always disagreeable and often troublesome, but also because reposition is frequently more difficult and more painful the second time than the first. During the reposition of retroflexions of some years standing, slight adhesions are separated and old cicatrices extended more often than the operators notice, and while the operation may be done once without giving rise to any symptoms at all, its repetition may bring into renewed activity the processes of bygone inflammation.

§ 151. For some time after its introduction the pessary should be examined daily, to ascertain whether the instrument keeps the uterus in the normal position in spite of the varying distension of the rectum and bladder, and is not, by its pressure, giving rise to some serious trouble, or interfering with the nourishment of the mucous membrane of the vagina. It is more particularly in the former respect that the control is required by the figure of eight pessary; in the latter it is abso-

lutely necessary for the sledge-shaped pessary, which as it is preferably employed when the vagina and the soft parts of the pelvic floor are relaxed, is supported not only by the soft parts themselves, but also to some extent by the bony skeleton

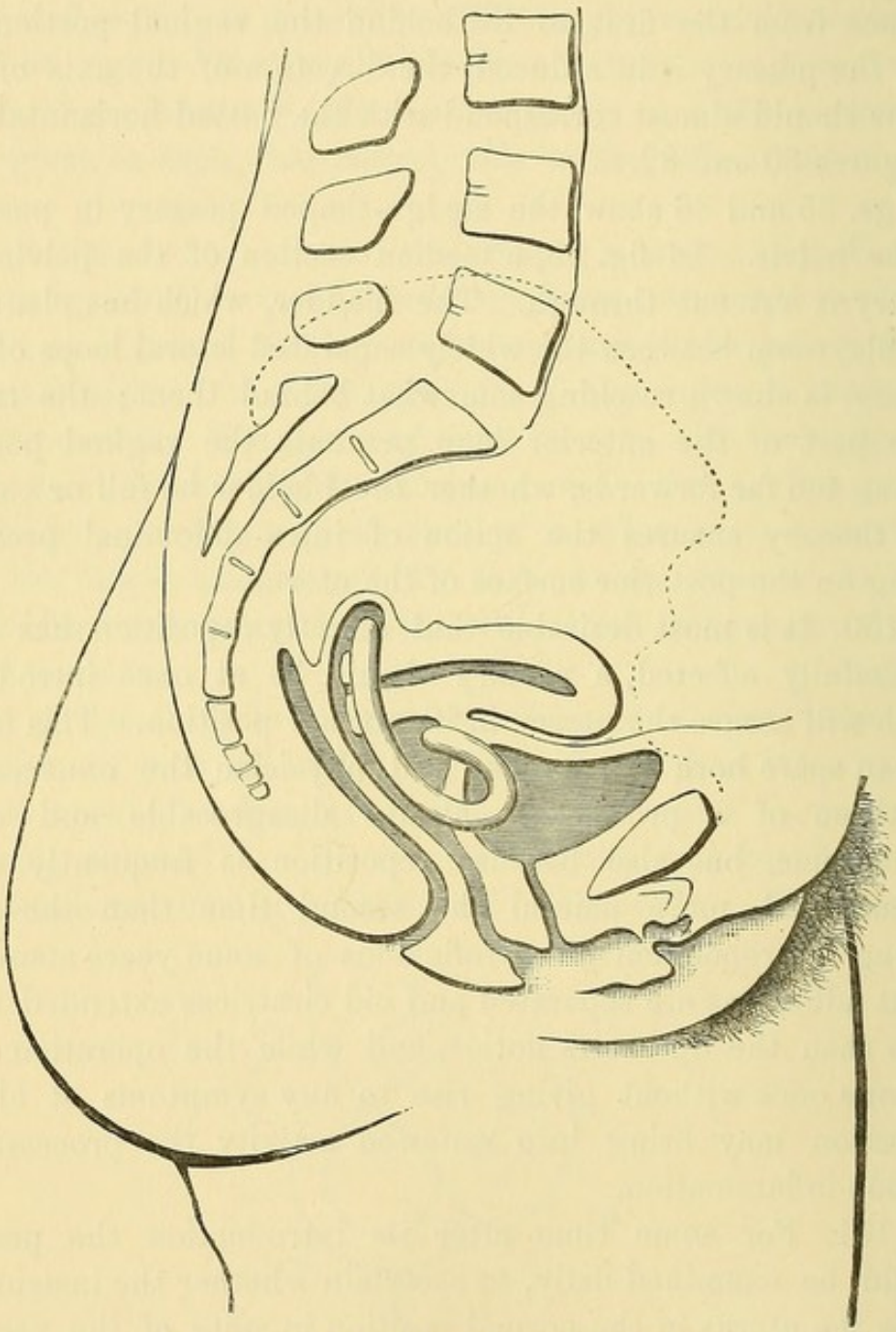


Fig. 85.—Sledge-shaped pessary in position.

behind them, and which, if the pressure it causes is not evenly apportioned, or if before taking up its proper position it turns about its own axis, may come to press the mucous membrane full sorely against one of the sacro-iliac spines or sacro-spinal

ligaments. It is of course most important to find this out in time and to make a suitable alteration in its shape.

The patient during the time she is kept under observation should be allowed, unless there are complications to forbid it, to move about freely and even under certain circumstances to undergo some fatigue, in order to decide whether the pessary keeps the uterus in the normal position in spite of unfavourable conditions. If during several days observation the condition of the affected parts appears to be uniformly satisfactory, the pessary may be considered to fulfil the indications, the patient may be relieved from daily attendance, and it will afterwards be sufficient for her to be re-examined at intervals of one, two, four, and eight weeks. So much is absolutely necessary, for it

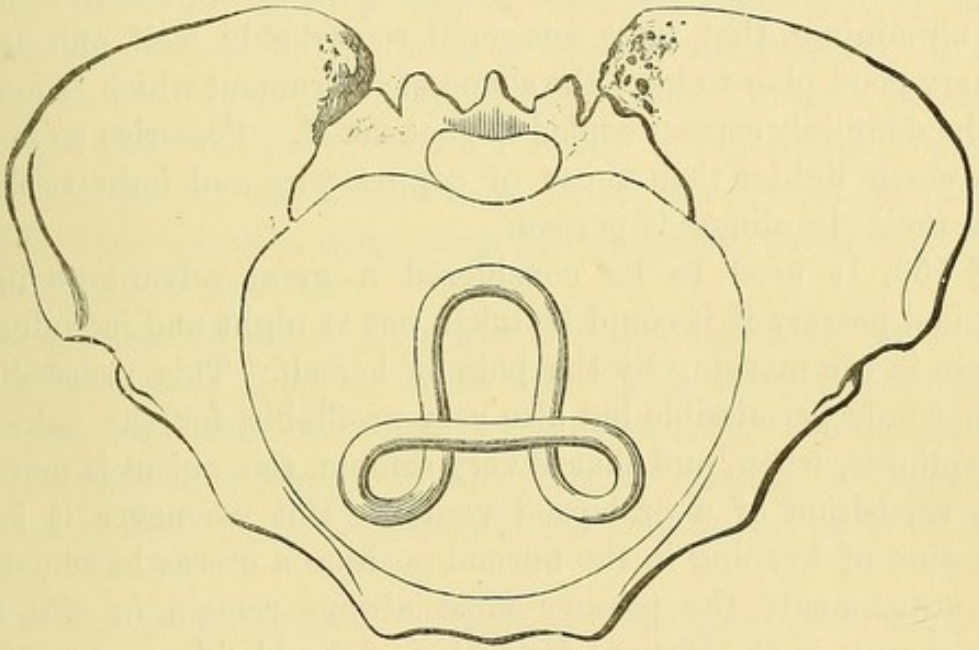


FIG. 86.—Position of the sledge-shaped pessary in the pelvis.

not infrequently happens, as the enlargement of the uterus generally subsides in a short time, that the pessary, at first well adapted to the case, subsequently becomes inadequate, and its shape must be altered to suit the altered conditions of the parts.

§ 152. The pessary if found efficient may be left in position for a year, but vaginal irrigation must be employed for the sake of cleanliness, and for this purpose it is best to use a weak solution of permanganate of potash. This irrigation, if there is no secretion discharged, need only be practised for a couple of

days after each menstrual period, but if there is any catarrh it should be employed every day. After the lapse of one year it must be ascertained whether the pessary still fulfils its object and has not injured the mucous membrane of the vagina; in any case the instrument should at that time be changed, for the india-rubber covering decays after one or two years, and we must not wait till this has happened. Both in order to avoid the decay of the pessary and the necessity of changing it, and more especially on account of the offensive smell arising from any pessary of soft rubber, a smell that cannot always be got rid of even by the most scrupulous cleanliness, one may, when the flexible ring has attained its definite shape, have an instrument made like it of hard rubber, silver, or aluminium. I have had both figure of eight and sledge-shaped pessaries made of aluminium, that have answered remarkably well, and it is a very good plan to have the shape of instrument which is found to be definitely correct copied in that metal. Pessaries so made are much lighter than those of copper wire and india-rubber, and their cleanliness is perfect.

§ 153. It used to be considered a great advantage in a vaginal pessary if it could be taken out at night and introduced again in the morning by the patient herself. This proceeding is not only permissible but also very profitable for the sake of cleanliness, when, and that is very seldom, the object is merely the reposition of a prolapsed vagina. But whenever it is a question of keeping in the normal position a uterus loosened in its attachments, the pessary must always remain *in situ*, for any change in the state of distension of the bladder and rectum occurring while it was removed would restore the retroflexion. The continually reiterated but erroneous idea that the introduction of the pessary replaces the uterus must be given up for all cases.

§ 154. From the directions in the preceding paragraphs the treatment of retroversions and retroflexions by pessaries, requires great perseverance and minuteness of detail, and the expenditure of much time, and the question arises whether as good results may not be more easily obtained in some other way. The pessaries in most general use for retroversion and retroflexion are Carl Meyer's elastic gum ring, and Hodge's so-

called lever pessaries made according to Braun's description of hard rubber, in point of fact "closed lever" pessaries, the different forms of closed ring suggested by Hodge.

Meyer's elastic rubber ring secures the vaginal portion in a nearly central position in the pelvis, and therefore in favourable cases prevents it from passing so far forwards as is necessary for complete retroversion, but retroflexion cannot be diminished nor prevented from recurring after reposition by this pessary.

Hodge's pessary, a closed oval ring, the plane of which is bent into the shape of an S, was by its inventor designed to *replace* the uterus, to transfer it from an anomalous position into the normal one. Both by Hodge himself and by Braun who first introduced it to us, the instrument was extolled distinctly upon the ground that it rendered reposition by the sound, the method at that time practised, unnecessary. It is, however, now very generally admitted that Hodge's pessary does not do this. The question remains whether, after reposition, this pessary can keep the uterus in the normal position, an effect attributed to it by many gynecologists, particularly by Wilhoft, quite recently.*

As a matter of fact if the uterus has been previously replaced, Hodge's pessary does in some cases keep it in the normal position, and does so because, by extending the posterior vaginal vault backwards and upwards, it compels the vaginal portion to keep in its proper position, well at the back of the pelvis.

But the posterior vaginal vault, if tender, as it very often is directly after the elevation of a retroflexion, cannot be put sufficiently upon the stretch to fix back the vaginal portion. If the upper and back part of the vagina is roomy and relaxed, a condition in which it very commonly is in retroflexion, we may stretch the vaginal vault as far backwards as ever we like without thereby compelling the vaginal portion to remain in the back of the pelvis; it slips forward in the loop of pessary, and though the latter is in a proper position, the uterus falls back over it into retroversion, just as if it was not there at all.

It is only when the vagina is pretty rigid as well as pretty

* *Zeitschr. für Geburtshülfe und Gynäkologie*, Bd. iii., Stuttgart, 1878. S. 398.

long, and when there is no tenderness in the posterior vaginal vault—a combination of circumstances not often found with retroversion—that Hodge's pessary actually replaces the uterus, forces the vaginal portion into a posterior position and thereby transfers the intra-abdominal pressure on to the posterior surface of the uterus.

Even in these rare cases in which Hodge's pessary does at first keep the uterus in the normal position, one may frequently observe that it soon becomes inefficient. This is because the vaginal vault, at first tense, has in time been dilated by the pessary.

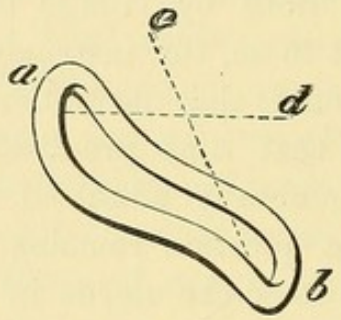


FIG. 87.—Ordinary form of Hodge pessary.

Figure 87 *ab* is the form of Hodge pessary in most common use; the dotted lines *c* and *d* are the directions of the axis of the uterus. At first the vaginal portion, fixed in retroposition by the tension of the posterior vaginal vault, has to lie in the loop *a*, and the corpus uteri is thereby kept in anteposition with its fundus at *d*. But when the vaginal vault becomes enlarged the pessary no longer prevents the vaginal portion from sinking down towards the anterior loop *b*, the intra-abdominal pressure again falls on the anterior surface of the uterus and the fundus uteri again sinks back towards *c*.

Either of my pessaries, the figure of eight or the sledge-shaped, will confine the vaginal portion in the back part of the pelvis, however relaxed the vaginal vault may be, and will do so *without any tension*, because its point of action will be *the anterior wall of the cervix uteri*. In fig. 88 the mode of action of the figure of eight pessary is represented diagrammatically; *a* is the direction of the normal fixation of the uterus by the folds of Douglas; *b* that of the support given to the uterus by the pessary, to compensate for the loss of this fixation.

The direction in which the pessary acts varies according to the position of its chief point of support. In fig. 88 the pelvic floor is supposed to be somewhat tense; when the pelvic floor is relaxed, the more the pessary rests upon the pelvis itself (the

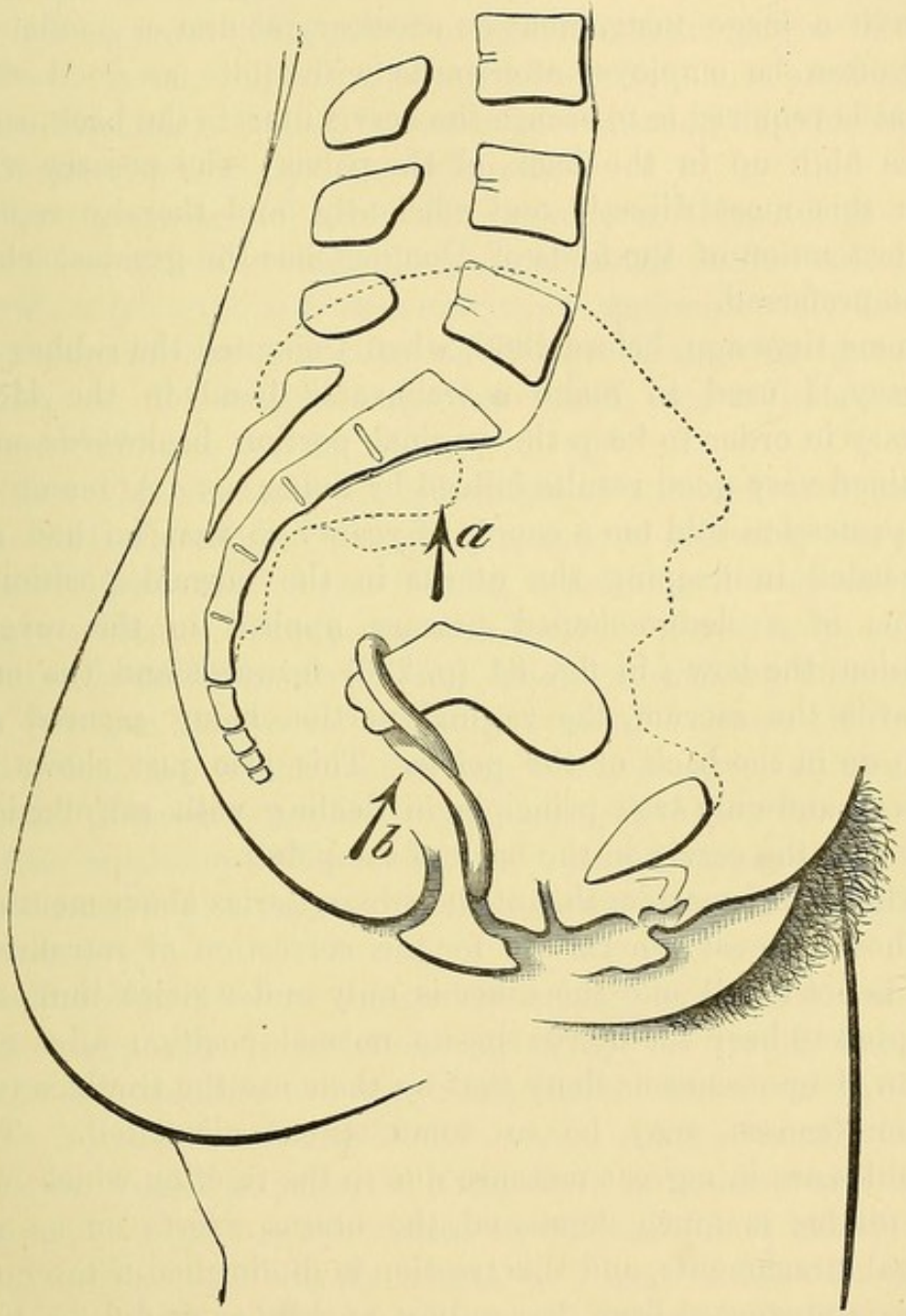


FIG. 88.—Figure of eight pessary *in situ*. *a*. Direction of normal action of the folds of Douglas. *b*. Direction of the support given by the pessary.

figure of eight upon the descending arches of the pubes), the more nearly does the direction of *b* coincide with the longitudinal axis of the pessary; it is in reality in many cases

parallel to the arrow *a*. My pessary will therefore keep the uterus in the normal position in cases in which the Hodge pessary is inefficient, its action is in all cases more certain, and however long in use, it does not, as the Hodge pessary so often does, impair the conditions of its own efficacy; on the contrary, even if a large instrument be necessary at first, a smaller one may often be employed afterwards with quite as good effect. What is required is to secure the cervix uteri in the back, sometimes high up in the back, of the pelvis; the pessary which does this most directly and efficiently, and thereby replaces the lost action of the folds of Douglas, has the greatest claims to be preferred.

Some time ago, before 1860, when I adopted the rubber wire pessary, I used to make a transverse bend in the Hodge pessary in order to keep the vaginal portion backwards, and I obtained very good results indeed by doing so. A member of the profession told me a couple of years ago that he had even succeeded in keeping the uterus in the normal position by means of a sledge-shaped pessary applied in the reversed position, the bow *i* in fig. 84 (p. 236) forwards and the end *c* towards the sacrum, the vaginal portion being secured at *a* high up in the back of the pelvis. This also just shows that the one and only true principle in dealing with retroflexion is to secure the cervix in the back of the pelvis.

Although I consider that of the two pessaries above mentioned as those in most general use for the correction of retroflexion, one is not at all, and the other is only under strict limitations adapted to keep the uterus in its normal position after reposition, I by no means deny that by their use the troubles retroflexion causes, may be to some extent alleviated. These troubles are in a great measure due to the traction which, when the fundus is much depressed, the uterus exerts on its peritoneal attachments, and this traction is diminished if the fundus uteri is prevented from descending as low as it did, or if the uterus is in any way limited in the extent of its movements. Each of these pessaries causes both these results, for the uterus can never even temporarily occupy the space immediately above the pelvic floor taken up by the pessary. If the retroflected uterus is supported in a similar fashion by a tampon of soft cotton

wool, the relief is often much greater than that afforded by the hard pessary. Such a tampon has, it is true, the inconvenience, but also the advantage, that it must be changed every day.

The use of these pessaries will therefore never be entirely given up. Every one who is, who perhaps has to be, content with giving some little relief to suffering that might be permanently cured, will continue to employ these instruments, the utility of which is limited to somewhat elevating and decreasing the mobility of the retroflected uterus.

That such means of alleviation are in great demand, and that even those of acknowledged reputation often prove inadequate, is evident from the fact that every new appliance that has the semblance of any particular advantage of its own, generally because its deficiency is not yet found out, is immediately brought into use.

§ 155. The effects of the reposition of a retroflected uterus, even when there has been no question of relieving any symptoms of incarceration, are in most cases immediately and very plainly evident. Movements that before it were always painful are now, even if somewhat active, made without any discomfort, and postures that were anxiously avoided because they were distressing, no longer cause any inconvenience, so that the patients themselves are often astonished at the sudden increase in their capability of exertion. Any pain there may have been in connection with defæcation or micturition usually disappears at once.

In the reduction and removal of uterine symptoms resulting from the passive congestion caused by the retroflexion, the effects of reposition are very remarkable. Chief among them is the decrease in the size of the uterus, which is usually appreciable on digital palpation as a loss both in breadth and thickness, and which, when measured by the sound, not infrequently represents a reduction in length of 1 cm., or more in a few days. As the flexibility of the uterus is not as a rule diminished, is indeed commonly increased, the immediate effect of the manual reposition of the retroflexion is generally anteflexion. If the uterus stiffened in the extended shape by metritis, lay in retroversion, the immediate effect of reposition is anteversion, but after a few weeks or even days normal anteflexion generally

takes its place, as the conditions which kept up the metritis are removed by permanent reposition.

Even in the rare cases in which the uterus has become rigid in retroflexion, the anomalous angle of flexion usually disappears under the action of intra-abdominal pressure soon after the reduction is effected and the cervix secured in retroposition.

The swelling of the vaginal portion, of the posterior lip in particular, which in retroflexion of long standing is often so very considerable, as a rule subsides quickly after successful reposition. Extensive ectropion which has previously resisted protracted treatment by scarification and caustics, disappears spontaneously, or at all events under a short course of suitable local applications, and it is seldom that any such ectropion of the cervix of a retroflected uterus, that due to laceration naturally excepted, ever requires operative treatment. Catarrh of the cervix or body of the uterus, unless of very long standing, also diminishes or disappears.

Upon profuse and accelerated menstruation the effect of reposition is quite surprising. It is by no means uncommon even when the reposition is effected just before the time when according to the accelerated habit menstruation would otherwise have come on, for the succeeding discharge to be postponed to the normal term, and to be then perfectly normal in amount and duration. The effect of reposition on menstruation is so regular, that if the catamenia continue to be profuse on two or three occasions after the uterus is in its normal position, and no other reason for their being so can be found in the persistence of oöphoritis or some other complication, one may conclude with tolerable certainty that there is some change in the uterine mucous membrane, for the diagnosis of which dilatation of the cervix is absolutely necessary.

§ 156. The ovaries, on the reposition of the uterus, return to the position they normally occupy, and their swelling and tenderness on pressure, with very many of the painful sensations which accompanied the retroflexion, in most cases soon disappear.

As the position of the ovaries can be made out more easily, and therefore by most people more exactly, when the uterus is displaced to one side, and more particularly as the ovarian liga-

ments are much more readily felt on digital examination when they are somewhat on the stretch, I have, in order to illustrate the change in the position of the ovaries in retroflexion of the uterus, selected a case in which the uterus had a short attachment to the left side, and in which the displacement of the right ovary could on that account be very easily felt and demonstrated.

Mrs. H., from M., 44 years of age, came under treatment in the year 1876 for retroflexion and uterine catarrh, and was discharged with her uterus well supported by an extra median pessary, like that represented in fig. 75. In the February of the following year, as she was still suffering from the catarrh,

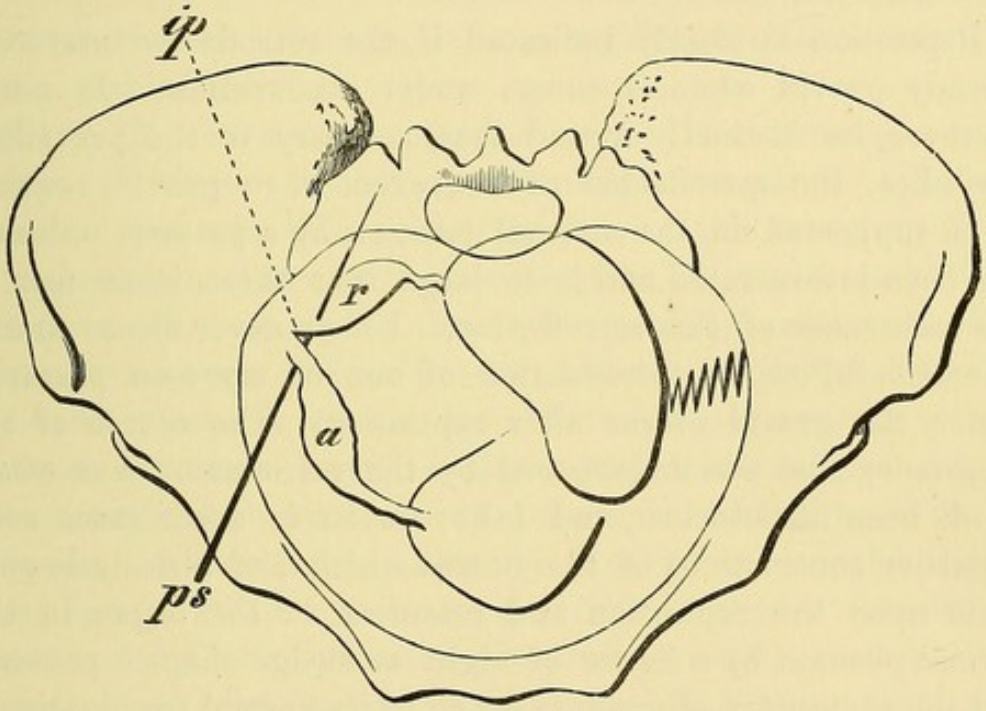


FIG. 89.—Reposition of the ovaries (the right only is represented); *ps* is the edge of the right psoas muscle; *ip* the ligamentum infundibulo-pelvicum.

the pessary was removed for the application of local treatment. The uterus at once fell back into retroflexion, but could be easily replaced, and each time this was done, the ovaries, which had been much swollen and very tender but were at this time normal, were replaced out of the position *r* into that at *a*, and each time fell back again with the relapse of the uterus. (Demonstration during the examination of the case). Fig. 89 represents the condition on February 13th, 1877.

§ 157. In restoring the capability of conception, the effects

of reposition are very gratifying. Though retroversion and retroflexion do not, it is true, directly affect this capability, the conditions which result from retroflexion of long standing may undoubtedly do so. Upon these conditions, as just explained, reposition exercises a most salutary influence, and as vaginal pessaries do not interfere with conception, it is a common occurrence for a woman, even when advanced in life, to become a mother after the reposition of a retroflected uterus, though for many years before it she had never even conceived. When pregnancy has occurred the pessary must be allowed to remain in position till after the 16th week, for only then will the uterus be sufficiently enlarged to prevent the recurrence of retroflexion.

Reposition is clearly indicated if the retroflected uterus is already gravid when it comes under observation. It must, however, be distinctly stated that, contrary to the prevailing prejudice, the retroflected uterus, even when gravid, requires to be supported in the normal position by a pessary, unless it has been incarcerated and is so large that there is no fear of the recurrence of the retroflexion. I have never observed any ill-effects follow the introduction of one of my own pessaries under the gravid uterus after reposition. The course of the pregnancy that was endangered by the retroflexion has afterwards been undisturbed, and I have even in some cases seen expulsive contractions of the uterus which had already begun, cease upon the reposition and retention of the organ in the normal position by a figure of eight or sledge-shaped pessary, and the pregnancy afterwards go on to its normal termination.

§ 158. The occurrence of pregnancy in a retroflected uterus is a circumstance of very favourable prognosis, for no phase of uterine life is so propitious for the permanent cure of this displacement as the puerperal state, at term, or premature. It is, however, well known that in women who have previously suffered from it, the retroflexion generally recurs after childbed, whether at full time or premature, and to prevent this recurrence, it is my practice to order bladders of ice to be systematically applied to the abdomen and the use of cold clysters, to have the bladder frequently emptied, and also to promote the involution of the uterus by the internal or subcutaneous ad-

ministration of ergot of rye ; in a large majority of my cases there has not been any relapse.

Should the patient not come under treatment till her uterus has fallen back into retroflexion, yet if it is within the first six weeks after her confinement, or even later as long as the processes of involution are not concluded, the chances are still much in favour of a permanent cure, provided that we can so arrange the conditions mechanically that the uterus will be kept in the normal position while the involution and new formation are being completed.

A pessary used to prevent the uterus from falling into retroflexion during the puerperal state, after labour at term or abortion, may be removed as soon as the entire process of involution has run its course, without any danger of the recurrence of the displacement.

§ 159. The effects of reposition upon diverse nervous symptoms are often astonishing. Neuralgic or paretic affections of the lower extremities, directly due to the pressure of the retroflected uterus, pass away at once, it would indeed be better to say that only by their prompt disappearance is their dependence upon the existence of the retroflexion disclosed. Nervous affections caused by reflex action from the uterus through the nervous centres, also reveal their connection with the displacement, by their disappearance coinciding with its removal. I have often observed a nervous headache depart immediately and for ever, on the reposition of a retroflected uterus, and I do not mean headaches only called nervous because their cause was not known, or in the sense that every pain is nervous, but properly diagnosed trifacial vaso-motor neuralgia, cases of hemicrania which had existed for years, exhibited paroxysms regularly several times a week, and which had been most vigorously treated in the orthodox manner without any benefit whatever. Symptoms of mental depression, from " simple want of tone " to well-marked melancholia, have also sometimes been shown, *ex juvantibus, i.e.*, by the beneficial effects of reposition, to have depended upon retroflexion of the uterus.

The effect of reposition on these nervous symptoms is in some cases direct, manifesting itself within twenty-four hours

at the most, in others indirect through the general health, and therefore only apparent after some weeks or months. Such symptoms are very often merely due to the anæmia induced by protracted uterine disease and more especially by the hæmorrhage and catarrh, and the repair of this anæmia naturally takes some time after the cure of the local affection.

§ 160. The fact that most of the complications to which the distressing symptoms of retroflexion are due, are results of the displacement, has been several times stated, and is exactly what makes the reposition and retention of the uterus the most important indication. It stands to reason, however, that with the retroflexion complications may exist which are quite independent of the displacement; it is also certain that the well-known aphorism *cessante causâ cessat effectus* is sometimes only true in a very limited sense. Complications, undoubtedly the results of a retroflexion, may endure persistently long after it. The permanent effects of long standing retroflexion upon the nourishment of the ovaries, once a certain stage is past, are soon beyond the influence of any treatment of the uterus (cp. § 56, § 130, pp. 98, 205).

Two very common and important complications of retroflexion, the special treatment of which is often necessary and nearly always effective, must be briefly alluded to: viz., uterine and vesical catarrh.

Nothing perhaps is more certain to make a catarrh permanent than stagnation of the secretion. In the uterus the conditions are particularly favourable for such stagnation. In the bladder the conditions are not favourable for actual stagnation, but the secretion may not be completely washed away even when plenty of water is passed.

Though the reposition of the uterus has usually a most beneficial influence on these catarrhs, it is in many cases not enough in itself to cure them. The best method of treatment, unless the affection requires still more energetic means, is a long course of systematic and complete washing away of the secretion of the mucous membrane. For this purpose a solution of carbolic acid, 1, 2, or even 5 parts to 1000, should be freely injected into the bladder in the usual way; for the uterus a 2 to 3 per cent. solution may be used.

Severe purulent endometritis is a common complication of retroflexion, and as the intra-uterine treatment of catarrh and the retention of the reposed uterus by means of a pessary cannot be carried out at the same time, the question is constantly cropping up in cases in which the reposition is possible, whether the catarrh ought to be treated in preference to the retroflexion, or *vice versâ*. In the presence of any inflammatory complications, if, for example, the peritoneal investment of the uterus or the ovaries is very tender under pressure, the reposition of the uterus is certainly the first thing to be done, for not only is permanent reposition the best treatment for the complication, but the intra-uterine treatment of the catarrh is contra-indicated as long as any inflammation is going on.

If there are no such complications, the catarrh, if of long standing or very considerable, should be treated first by dilating and washing out the uterus, and the reposition be carried out afterwards.

There are some further considerations which may decide the matter. If the patient has little time to give up to her cure, reposition must be preferred to treatment of the catarrh, in the first place because it takes less time, and secondly because while reposition of the uterus diminishes both the catarrh itself and the troubles arising from it, more serious troubles proceed from the retroflexion.

If a patient is very depressed in mind, and is herself convinced that the catarrh requires attention, it is then better to treat that affection first. It is true that the effect of reposition upon the symptoms of depression would be far greater than that of the treatment of the catarrh, but one must remember that as the pessary could not be left in position when this treatment had to be afterwards undertaken, the uterus would then fall back again into retroflexion, and the patient, sensible of a relapse, would be more depressed than if the displacement had been left alone. In such cases therefore, the catarrh should be first attended to and the cure completed by the permanent reposition of the uterus.

§ 161. When, from the effects of past parametritis posterior and long years passive extension of the folds of Douglas, the retractor muscle of the uterus is entirely destroyed and the

elasticity of the folds completely worn out, it is always a difficult matter to restore their functions. If any attempt is made to do without the pessary the old retroflexion invariably recurs within a few days. The uterus in such cases cannot do without the mechanical support of the instrument until after the completion of senile involution, when, in the absence of catamenial congestion, it is probable that retroversion if it does occur will not cause any symptoms. Should an attack of parametritis posterior however happen after reposition, it may fix the uterus in anteflexion which, though stabile and pathological, will make the pessary unnecessary.

Where the musculus retractor uteri is not entirely destroyed, the permanent reposition of the uterus, by means of a pessary, makes the condition of affairs the most favourable possible for its restoration; it is no longer submitted to passive extension and its points of attachment are kept in permanent approximation. In such cases therefore, and they are the majority, if we systematically employ all those means mentioned in § 136 which, when the retroflexion is recent, generally bring about a rapid cure, there is a probability, which is borne out by a long series of successes, that sooner or later the pessary may be removed and the uterus will again be able, even without such mechanical support, to preserve its normal position, in spite of the variations in the distension of the neighbouring organs.

§ 162. The general state of health of the patient is generally greatly depressed if the retroflexion is of long standing. The direct effect of reposition in restoring it is often manifest in a very short time. Even if the anæmia from the profuse menstruation has been very great, it is often almost completely repaired when the catamenia have occurred twice at normal intervals and with diminished hæmorrhage. The questions whether the convalescent should be left to regain her strength quietly at home; whether she should be sent to the country or seaside or should try mountain or forest air; what baths or waters she should make use of in order to be restored as soon as possible to perfect health, depend on so many individual considerations for the most part in no special sense gynecological, that it is hardly our task to discuss them here. I will

just mention one thing in reference to bathing places and retroflexion; numbers of women with reducible retroflexion spend years in visiting all sorts of baths seeking relief for their metrorrhagia, leucorrhœa, anæmia, nervousness and so on, before finally consulting a gynecologist; and many others, although known to have retroflexion are sent to such places, partly from an idea, even quite recently advanced by distinguished authorities, that retroflexion of the uterus is itself incurable, and its complications only within reach of treatment, partly from the consideration that it is well to fortify their constitution before submitting them to a course of gynecological treatment that may tax their strength severely. It is to be hoped that the curability of retroflexion of the uterus will soon be generally admitted; any attempt to strengthen those affected with it before trying reposition is fruitless, and can have no permanent result as long as the retroflexion exists. The reposition of a retroflexion is generally a very simple matter, and if there are no serious local complications we can satisfy ourselves within a fortnight that the pessary will permanently retain the uterus in its normal position. Any woman with retroflexion will derive far more benefit from the use of baths, if her uterus is replaced before she visits the bathing place than she can if the order of treatment is reversed.

§ 163. Reposition of the retroflected or retroverted uterus is not always practicable, but apart from those cases in which any immediate attempt to effect it is out of the question on account of the presence of acute inflammation in the uterine adnexa, no one should ever consider it to be even for the time impossible until he has examined the uterus on every side by bimanual palpation in deep narcosis, from the vagina, rectum, and abdominal surface, and convinced himself not only of the fact that it is so but also of the conditions that make it so. Complicated parametritic cicatrices and extensive peritoneal adhesions are the conditions which may demonstrate that for the time the reposition is impossible.

To illustrate the diagnosis and treatment of these complicated cases, I insert here the particulars of two which have been under my observation quite recently.

Mrs. B., from N., 33 years of age. Scrofulous in childhood,

she grew up a healthy girl; was married when 24, soon conceived but aborted at the third month, and afterwards suffered from metritis, which repeatedly recurred with profuse hæmorrhage and much catarrhal discharge; she lost flesh and grew very nervous. In the year 1876 her uterus was found to be in retroversion, and attempts were made to replace it but were unsuccessful. Examination in narcosis, on October 20th, disclosed the condition shown in fig. 90. When any attempt was

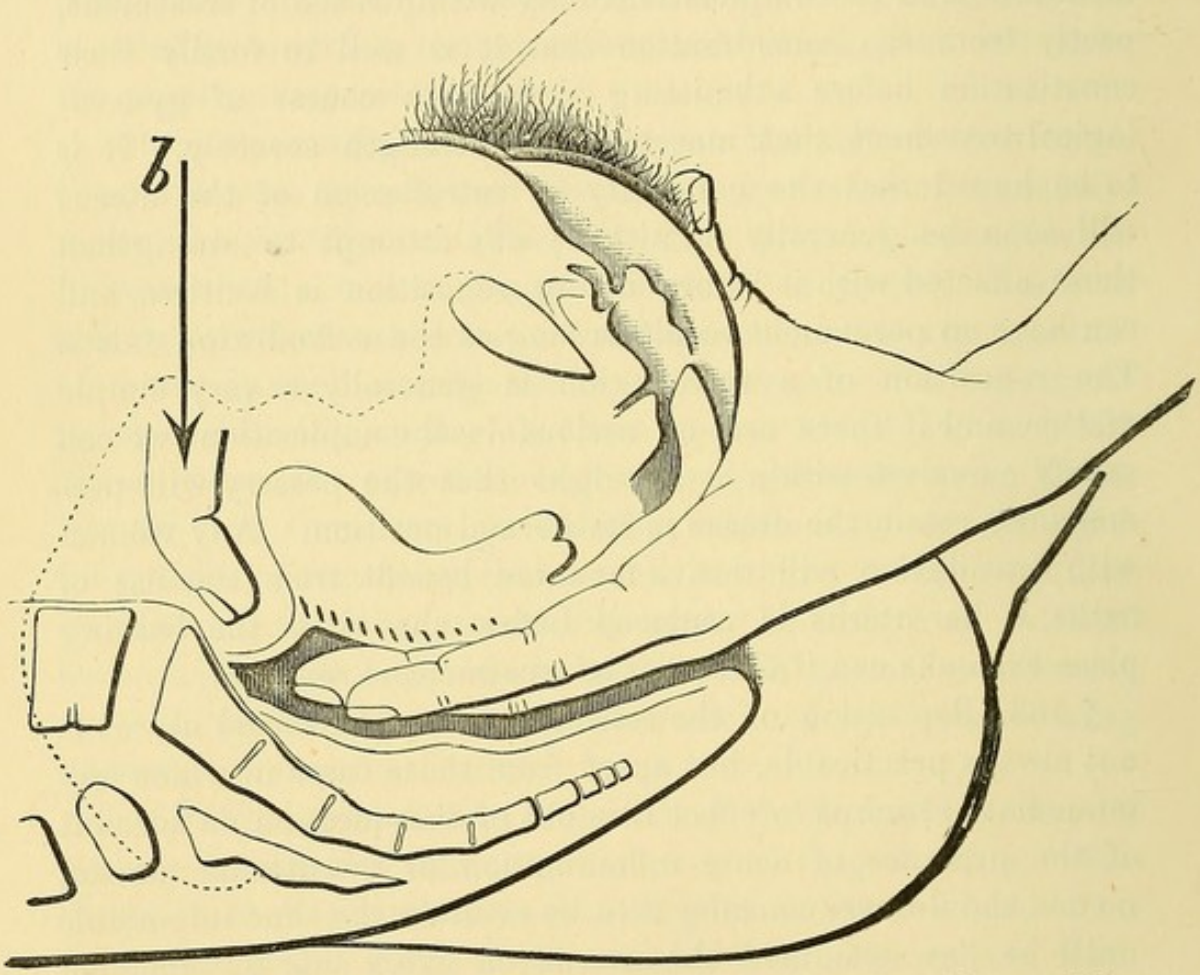


FIG. 90.—Adhesion of the uterus to the wall of the rectum preventing reposition. Fingers of left hand passed well above Douglas' folds.

made to draw the uterus forward by the fingers of the hand on the abdomen, the fingers passed up the rectum beyond the folds of Douglas could feel the walls of the rectum put on the stretch in such a way that it seemed easier to tear them asunder than to separate the two organs one from the other. In addition to the recto-uterine adhesion shown in the median section (fig. 90) there was a broad cicatrix in the right parametrium, there was also severe catarrh. As at that time

reposition was impossible and the local treatment of the uterine catarrh was inadmissible on account of the presence of peritoneal irritation, the only thing to be done was to try and cure the peritoneal mischief. The woman was ordered to try peat baths during the summer, and to come back in a year that it might be ascertained whether the conditions had become more favourable for reposition.

Cases of this sort are not altogether exceptional; if the rectum is so roomy and relaxed that its anterior wall can follow the uterus, reposition is momentarily possible, but of course does not persist. Repeated attempts at retention naturally cannot be made without doing some injury, besides which they shake the faith in a means of cure employed in the wrong place. Combined examination, with the fingers of the one hand far up the rectum, is the only way of arriving at the diagnosis and indications for treatment. I have often, and always with good results, separated recent adhesions between the uterus and the rectum by the manipulation represented in fig. 90. Even in cases where according to the anamnesis, the adhesions had existed nearly a whole year, I have seen them become so loose under suitable treatment that they could be separated without danger, and the uterus permanently secured in the normal position.

Another particularly obstinate form of attachment of the retroverted uterus which I have several times met with is adhesion of the seat of the insertion of one of the fallopian tubes to the posterior pelvic wall near the sacro-iliac synchondrosis. In such adhesions there is generally a history of some puerperal mischief, but chronic processes in the parametrium also appear to play some part in their origin.

Mrs. P., from F., 26 years old; healthy as a child, but delicate during her girlhood, she was married at the age of 20, and became a mother at 21. She was ill and feverish during her confinement, and from that time had suffered from dysmenorrhœa and violent pains in the pelvis coming on frequently during the intervals. She had been treated as an out-patient in the year 1876 for dysmenorrhœa and attacks of cardialgia and was then very anæmic and had a severe uterine catarrh; the uterus was inclined backwards and there was tenderness in

the right parametrium. When I saw her again in the year 1879, the condition was as represented in fig. 91. The uterus was somewhat displaced *in toto* to the right, the seat of the insertion of the right tube was immovably fixed to the back of the pelvis on the same side. The dysmenorrhœa had been mitigated and the attacks of cardiac pain cured by the local treatment of the uterine catarrh. Peat and sand baths have, as yet, had no effect on the fixation of the uterus.

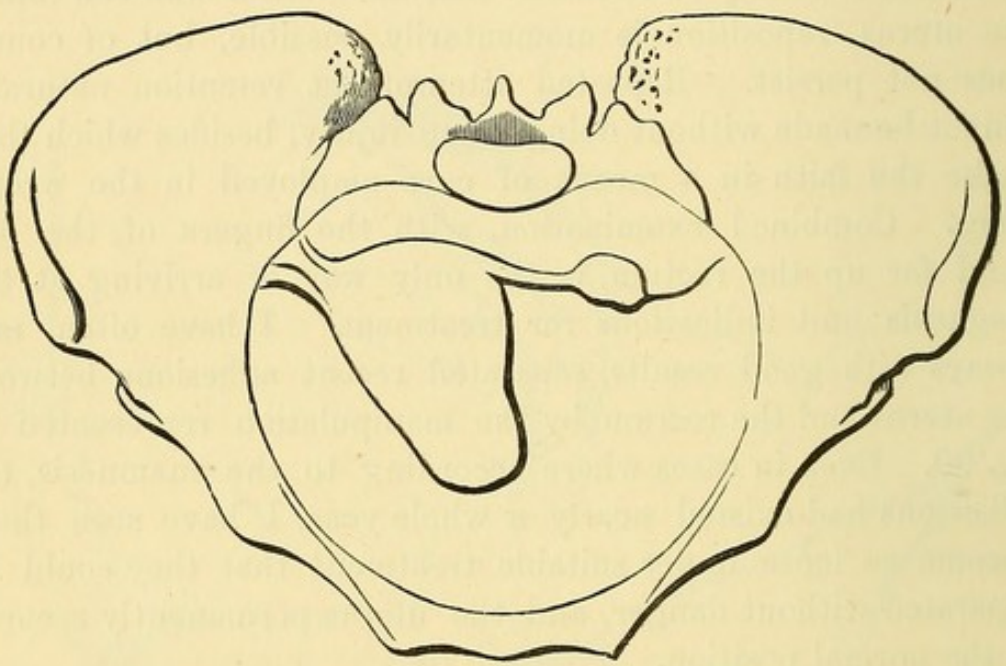


FIG. 91.—Lateral displacement of the uterus, adhesion of the seat of insertion of right fallopian tube to the pelvic wall.

I once saw a perfectly similar case of uterine fixation which disappeared during the course of a normal pregnancy. The uterus fell back into retroflexion during the puerpery, but was permanently replaced in a perfectly normal position.

§ 164. Once the reposition of a retroflexion or retroversion is ascertained to be impossible, our efforts must chiefly be directed to endeavouring to cure the complications, the metritis, oöphoritis, catarrh, etc., to which the principal troubles of the patient are due, and to instituting such a system of treatment as will as far as possible improve her general health. If, as is often the case, the principal thing complained of is sterility, and if we only have to do with the results of chronic inflammation, we should, provided that there is any possibility at all of the uterus rising or being raised up out of the pelvis, take

particular care that the treatment should, as far as lies in our power, render the conditions for conception favourable. The occurrence of pregnancy may, it is true, cause danger from the incarceration of the uterus or from extension of old adhesions, and of this the patients should of course be made aware; but by proper care and treatment, and suitable behaviour during pregnancy, the danger may be encountered without much apprehension. It is just such gradual extension of old exudations and cicatrices that, in conjunction with the normal increase in the local circulation caused by the pregnancy, not infrequently leads to a permanent cure, provided that during the puerperal state, and for some time after it, the patient is kept under intelligent observation and treatment. (Cp. § 158, p. 248).

Further, provided there is no active inflammatory process going on, or after such processes have been cured, one should not neglect trying to soften the parametric cicatrices and peritoneal adhesions, even when of long standing, with a view to their resorption making the reposition of the uterus afterwards possible. For this purpose, nothing in my experience has proved so useful as the application of heat; warm injections into the rectum and vagina, warm fomentations or poultices, peat baths as hot as they can be borne without injurious effect, sand baths up to 45° R. (133·25 F.) and particularly the latter, I can warmly recommend on the ground of my own success.

When such means have been employed systematically for some time, it should be ascertained by examination in narcosis whether the impediments to reposition are beginning to soften. Great patience and systematic perseverance on the part of both patient and physician, founded on an exact diagnosis and well defined indications for treatment, may lead to very gratifying results even in cases apparently irreparable.

§ 165. It may be mentioned, simply as a matter of history that, as in the case of anteversion, proposals and attempts have been made to deliver the uterus from the abnormal position it occupies in retroversion and retroflexion, by freshening the surface of the posterior lip of the os tincæ and healing it on the wall of the vagina. The principle involved in the proposal appears to be perfectly sound for certain cases of anteversion,

but in regard to retroversion must be set down as altogether worthless.

The proposal, originated unless I am mistaken by Aran, to prevent the fundus of the uterus from falling back again into the hollow of the sacrum by shortening the round ligaments at the anterior abdominal rings, is worth some consideration.

As a means of relieving obstinate retroflexion it has been quite lately proposed to perform laparotomy and heal the uterus, or the stump of it, to the abdominal wound.* If the laparotomy be indicated for some other reason, *e.g.*, for the removal of one or both ovaries, the idea of taking the opportunity to prevent the old retroflexion ever recurring by healing the uterus to the anterior abdominal wall is certainly worthy of consideration (Koeberlé). We should perhaps whenever an ovarian tumour is associated with retroflexion of the uterus, revert to the extra-peritoneal treatment of the pedicle, but the idea of performing laparotomy simply on account of retroflexion can, in my opinion, only be entertained when the uterus is firmly attached to the rectum or to the posterior wall of the pelvis, and the adhesions cannot be separated even in deep narcosis while the abdomen is unopened or, it would be better to say, when it seems improper to use, in the rectum and from the hypogastrium, the force necessary to separate them.

In such cases, therefore, as those represented in figs. 90 and 91, the danger of the operation, as far as I see at present, bears no relation to its probable advantages, but in every case where it would be possible to elevate the uterus up to the abdominal wall by means of the sound, it would certainly without any exception be also possible to secure it in its normal position by a mechanical support.

* I. P. Muller, Ueber Exstirpation des Uterus. Correspondenzblatt Schweizer Aerzte. *Jahrg.* VIII., 1878. See note at the end of the Chapter.

SUMMARY.

Retroversion is the stabile lying backwards of the fundus, the uterus being extended, or even still slightly anteflected in shape.

Retroflexion is the stabile lying backwards of the fundus, the uterus being at the same time flexed over its posterior surface.

In addition to retroversions and retroflexions caused by tumours, there are five forms of these displacements to be recognised as anatomically and etiologically distinct.

1. *Retroversion* in consequence of arrested development or senile involution.

2. *Retroflexion* from anterior fixation of the cervix.

3. *Retroversion* from high posterior fixation of the cervix of a uterus stiffened by metritis.

4. *Retroflexion* from elongation of the posterior wall of the uterus.

5. *Retroversion and retroflexion* from relaxation of the folds of Douglas. About 90 per cent. of all retroflexions arise in this way.

Of the remoter causes of retroflexion habitual over-distension of the bladder and rectum, deficient puerperal involution, and acute and sub-acute parametritis posterior, puerperal or otherwise, are the most common. The deepest retroflexions occur where prolapse has previously existed.

The consequences of retroflexion of the uterus are, profuse and too frequent menstruation, chronic metritis, and habitual abortion. Coexisting retroflexion of the ovaries is the source of many of the troubles and inflammatory complications. Secondary peritonitis often causes adhesions of the retroflected corpus uteri.

The commonest form of retroflexion (that named last) is capable of direct mechanical treatment, the effects of which are so reliable that, when a patient seeks advice for chronic metritis, the chances of her cure improve about 50 per cent., if the examination reveals a retroflexion of the uterus.

This treatment is bimanual reposition, with subsequent retention of the uterus in the normal position by means of a vaginal pessary. After an accurate diagnosis has been made of the obstacles to reposition, to obtain which narcosis and palpation with two fingers high up the rectum are often necessary, it is decided whether these obstacles should be overcome mechanically or not. Peritoneal adhesions of the fundus may be separated by steady pressure; ovarian adhesions and parametritic cicatrices do not admit of forcible correction. Flaky adhesion to the rectum, when of long standing, is often a persistent obstacle to the restoration of the normal position.

Some obstacles are more easily overcome by intra-uterine reposition, by the finger in the dilated uterus.

In order to make the reposition permanent it is necessary to prevent the cervix from falling forwards. Under normal circumstances, this is done by

the folds of Douglas; their lost action may be replaced by a pessary in the vagina. A figure of eight pessary, specially made for each case out of a ring of wire covered with india-rubber, is the best for this purpose. In very exceptional cases, such as some given in the text, it may be necessary to add to the pessary an intra-uterine stem of ivory. Such a stem must not be in any way attached to the vaginal pessary.

If the floor of the pelvis is relaxed, a sledge-shaped pessary will sometimes prove efficient when the figure of eight does not give sufficient support, in other cases sufficient solidity to carry the pessary must be given to the pelvic floor by a previous operation.

There is still a very widespread misconception that the uterus can be brought out of an anomalous position into the normal one, by the pessary. This action was specially claimed for the Hodge pessary when it was brought out. No pessary in existence can do this; the normal position must first be restored bimanually, a pessary may afterwards maintain it.

The mere introduction of a Hodge pessary, or of one of Meyer's rings is, as a matter of fact, often sufficient to give some little relief to the troubles of a retroflexion, and these pessaries, and others like them, will always remain in use, for every one who has to content himself with giving a little relief where a permanent cure might be effected, will continue to employ them, though their only advantage is to support the uterus and thereby, in some cases, diminish its painful mobility.

The troubles and inflammatory complications arising from an unreposed retroflected uterus are, however, very often made decidedly worse by the introduction of a pessary underneath it.

The beneficial effects of permanent reposition are startling. The pelvic troubles caused by the direct pressure of the uterus at once disappear; the enlargement of the uterus, "the infarct" very soon diminishes to an appreciable extent; there is no more menorrhagia and the menstrual interval becomes normal. All the symptoms of chronic metritis and endometritis decrease; the swelling of the ovaries is reduced and they are no longer painful; the various nervous symptoms vanish; pregnancy reaches its normal termination (the pessary should be removed in the fourth month).

NOTE ON CHAPTER VIII.

The author has lately published a paper "On the diagnosis and separation of peritoneal adhesions of the retroflected uterus and of the correspondingly displaced ovaries." *Zeitschrift f. Gebürtsh. u. Gynäk.*, B. xiv., hf. i., 1887, in which he gives the following details as to the manipulation required.

Isolated cords are, when possible, laid hold of by the fingers in the rectum and as it were pushed off the peritoneal surface of the uterus by the hand which has secured the fundus through the abdominal walls. In the case of cordlike adhesions passing from the posterior surface of the uterus to the posterior pelvic wall, he tries to avoid stretching their pelvic insertions by fix-

ing the cords by the fingers in the rectum and separates them as close to the uterus as possible, generally by the external hand. Cords passing from the corpus uteri to the back of the cervix may often be separated by a moderate pressure from the rectum while the uterus is steadied by the hand on the abdomen. In flaky adhesions of the uterus to the anterior wall of the rectum, the fingers introduced into the latter must be kept apart, so that while one pushes the uterus forwards the other can ascertain whether the upper part of the wall of the rectum is dragged forwards by the elevation of the uterus. With the aid of the hand palpating down between the uterus and rectum from the abdominal surface, the upper part of the wall of the rectum may be fixed by the tips of the two middle fingers, and the uterus pushed forwards by one of the other fingers of each hand. The fingers can then distinctly feel the presence of any adhesion, determine its solidity and if it will yield to a moderate pressure, may carefully separate it as far as is possible, perhaps right down to the floor of Douglas' pouch.

The ovary itself must never be laid hold of as a handle for the separation of ovarian adhesions; the finger must be kept close to the surface to which the ovary is attached and by a slow movement, as it were push it away from its hold. By the separation of both ovaries as well as of the uterus Schultze succeeded in one case in completely curing a paresis of both lower extremities, that had existed for several years. He estimates the force permissible, from the experience he has had in separating peritoneal adhesions when the abdominal cavity has been opened in laparotomy.

In regard to laparotomy, he says. "Fixing the uterus in the abdominal wound is not restoring its normal position, and it would be somewhat hazardous to try and retain the uterus in the normal position by means of a pessary after performing that operation, in any case no control of the position could be kept up, on account of the healing of the abdominal wound. If a woman had entirely lost her ability to work or capacity for enjoyment of life, as the case might be, from the effects of a retroflexion that could not be removed in any other way, I should not consider the opening of the peritoneum for the sake of curing the retroflexion unjustifiable, but would in such a case prefer to do so by a transverse incision in the posterior vaginal vault, then, after separation of the uterine and perhaps ovarian adhesions, and reposition, to shorten the peritoneum of the pouch of Douglas and the posterior vaginal vault in such a way as to confine the cervix in the back of the pelvis. Alqui's (Alexander Adams) operation might be afterwards performed in order to secure the fundus forwards while the vaginal portion was fixed back, and in this way the uterus would be restored to a position as nearly normal as possible."

CHAPTER IX.

DESCENT AND PROLAPSE OF THE UTERUS.

§ 166. *Definition.*—It has been the practice from ancient times to describe as *descensus uteri* that condition in which the finger in a digital examination encounters the vaginal portion at a shorter distance from the vulva than normal. No definite idea of the position of the corpus uteri has been implied in the term.

The unusual facility with which the vaginal portion is reached may depend upon several accidental external conditions, such as loss of adipose tissue, great patency of the vulva, etc., but apart from this, the shortening in its distance from the vulva is in most cases, a consequence of the vaginal portion lying abnormally too far forward, rather than too low down.

This position of the vaginal portion known as "descensus uteri" is therefore most frequently met with in those forms of retroversion or slight retroflexion which are due, either to congenital shortness of the vagina or to relaxation of the folds of Douglas (cp. figs. 17 *d*, 19, 20, 53, 59, 62) and consequently the term descent, in the vast majority of cases, merely expresses the condition found on vaginal examination in cases of retroversion and retroflexion of the uterus. In the further course of these displacements if only the fundus uteri continues to descend, *i.e.*, if only a higher degree of retroversion or retroflexion is developed, the vaginal portion passes upwards and forwards towards the anterior wall of the pelvis, but if the whole uterus sinks lower down in the direction of the axis of the vagina, the result is prolapsus uteri.

Prolapse is said to take place as soon as the vaginal portion emerges from the vulva.

The distinction of prolapse as complete or incomplete, loses something in value because the expressions are used in various senses. Strictly speaking, prolapse should only be called complete if the entire uterus lies below the level of the vulva, a condition by no means common, the occurrence of which is

absolutely denied by some authors.* But prolapse of the uterus, except in some cases to be presently described, is always necessarily accompanied by inversion of the vagina, and some writers therefore call the prolapse complete if the inversion of the vagina is so. This definition of complete prolapse does not by any means coincide with the one above given as strictly accurate; the whole of the uterus may be outside the vulva without the inversion of the vagina being complete, and conversely the inversion of the vagina may be complete without the prolapse of the uterus being so.

The vagina or supra-vaginal portion of the cervix may be hypertrophied to such an extent that the lower part of the uterus projects more or less out of the vagina, though the position of the corpus uteri is not materially changed. Various opinions are held as to whether such an appearance of the vaginal portion outside the vulva should be called prolapse. I have no hesitation in saying that it should; every exposure of the uterus to the light of day is prolapse; the particular condition existing is in no case at all exhaustively described by this expression alone; the anatomical relations of the uterus and its neighbouring organs are extremely variable, and must be specially determined in each individual instance. If we were to insist on giving the definition an etiological significance, we should, as the etiology is still quite undecided, for the time being have to do without any definitions at all. Whether the condition in question be called prolapse of the hypertrophied vaginal portion, prolapse without descent of the fundus, or, if anyone cares to give the name an etiological meaning that is exceedingly doubtful, prolapse from hypertrophy of the cervix; it certainly must be considered prolapse.

§ 167. *Anatomy.*—Except in the few cases in which the prolapse has been caused simply by the elongation of the vaginal portion, protrusion of the uterus out of the vulva is always accompanied by partial or complete inversion of the vagina. The external coat of the oviform tumour about the size of the closed fist which lies in front of the external genitals is formed by the inverted vagina. Its transverse folds, except at

* Kiwisch, *Klin. Vort. Prag.*, 1854. S. 174.

the parts close to the vulva, are spread out; the mucous membrane is dried up and its epithelium, grown somewhat like epidermis, often forms a layer of considerable thickness. In the last mentioned case the appearance of the whole tumour is a pale reddish-white, it is otherwise of a bluish-red colour, from the venous congestion. At certain spots, particularly in the neighbourhood of the orificium externum uteri, there is not infrequently ulceration of the mucous membrane of the vagina. This ulceration may be either simple, catarrhal with exuberant granulations, varicose, or gangrenous, and is due to the effects of external pressure when the woman lies down. The vaginal wall is often greatly hypertrophied, especially where it is inserted into the vulva and uterus, and often passes without any recognisable interruption into the vaginal portion; the latter, which is then only to be distinguished by the orificium uteri, forms in the upright posture the lowest part of the tumour, sometimes facing a little forwards or backwards. The orificium externum uteri may be in a normal condition; that part of the lips formed by the vaginal portion is generally spread out; very frequently, however, the orifice gapes wide open, with great ectropion, sometimes so very extensive that the whole cervix is inverted (Klob) and the orificium internum uteri exposed to view. In other cases, especially in senile involution of the uterus, the external orifice is contracted and may even be obliterated (Mayer, Hitzelberger).

The uterus lies inside the inverted vagina, and when entirely external to the vulva is generally in decided retroflexion. In very exceptional cases, it may, though completely prolapsed, lie in anteflexion. Such cases have been described by Louis Meyer, Alex Freund, and others. If the uterus is only partially prolapsed, its upper segment being still within the pelvis, the corpus uteri is then also generally inclined backwards with the fundus facing towards the sacrum, or at all events towards the promontory. In these latter cases in which the position of the uterus is only partially external, though retroflexion is most common, anteflexion is by no means rare. The entire uterus is generally swollen, its cavity increased in length, and the mucous membrane catarrhal; the increase in the length of the organ is often most marked in the cervix. The posterior wall of the

bladder, with the peritoneal lining of the excavatio vesico-uterina above it, and the peritoneum of Douglas' pouch, nearly always follow the inversion of the vagina.

The inversion of the vagina is often incomplete even when the prolapse is very great; a short remnant of the genital canal is generally left passing in the normal direction from the posterior margin of the vulva as, for example, is shown in fig. 108, further on. The prolapse itself is not often complete, that is to say, the upper end of the elongated uterus usually still projects into the pelvis.

Complete prolapse of the uterus may occur with incomplete inversion of the vagina (as shown in the figure just referred to) and complete inversion of the vagina with an incomplete prolapse of the uterus, as represented in figure 96. Figs. 92 and 93 represent a case which is a good illustration of the relation of the parts in complete prolapse of the uterus with incomplete inversion of the vagina. The profile in figure 93 is drawn according to exact measurements of the dimensions, not only of the external tumour, but of the uterus and bladder also; the loss of tissue in the posterior wall of the vagina opposite the fundus uteri was probably caused by a pessary which the woman had worn for a short time, but had removed on account of pain. These drawings were made on July 26th, 1877, from the case of Mrs. B., from H., 37 years of age, the mother of four children of which the youngest was nine years old. The prolapse first appeared twelve years previously. The cavity of the uterus measured 9·5 cm., that of the empty bladder with the urethra, eleven cm. upwards and ten cm. downwards. It was distinctly ascertained by combined examination, after complete reposition of the uterus in normal anteversion, that the peritoneal cavity must have extended right down to the apex of the prolapse.

The anterior wall of the rectum seldom follows the uterus down in its descent, but it is quite the exception for the bladder not to do so. In the rare cases of anteflexion of the completely prolapsed uterus alluded to further back, the connection of the bladder to the uterus and vagina was in several instances stated to have been totally destroyed. A case of this sort is represented in the second plate in von Franque's work.*

* *Der Vorfall Gebärmutter.* Würzburg, 1860.

The mouth of the urethra is generally concealed in the transverse folds on the anterior surface of the base of the tumour, the canal itself passes in a curve, or at an angle, downwards and backwards instead of upwards. When the prolapse is of long standing the vesical wall is often much hypertrophied and the mucous membrane generally catarrhal; the catarrh extends not infrequently to the ureters and pelvis of the kidneys. The passage through the ureters may be partially obstructed by the change in the shape and situation of the bladder. Distension of the ureters and hydro-nephrosis have

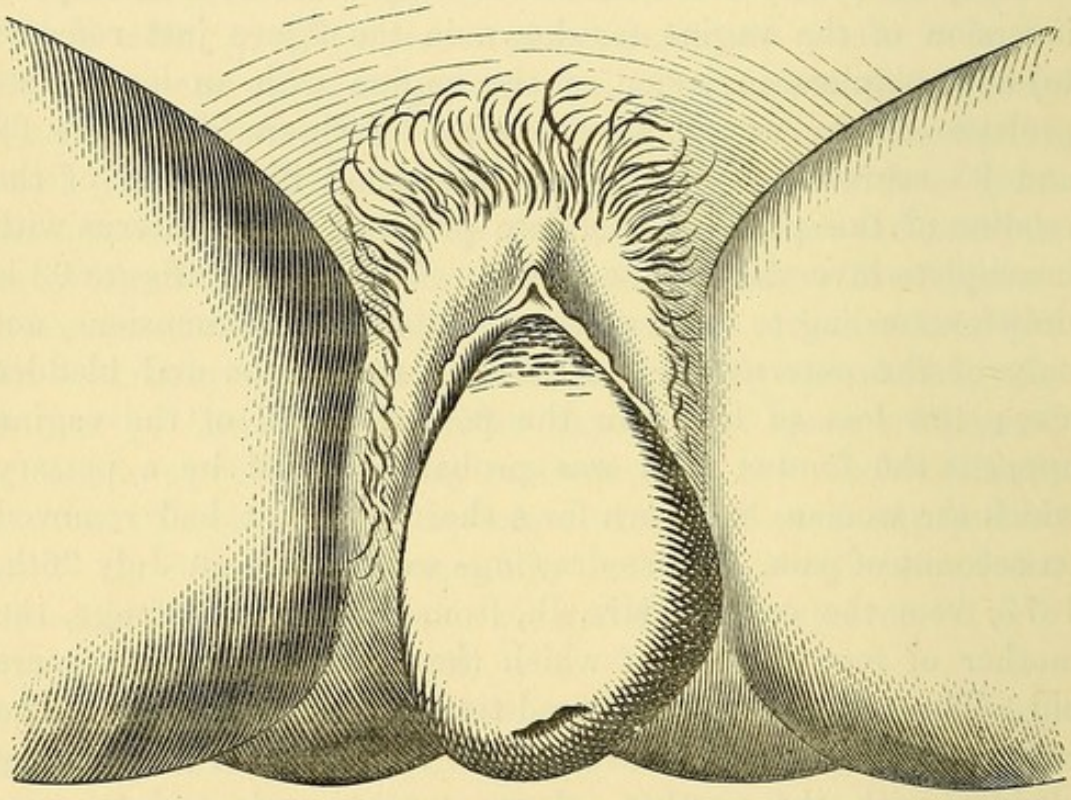


FIG. 92.—Prolapse of the uterus with complete inversion of the vagina.

been not infrequently met with as the results of prolapse of the uterus. The stagnation of the urine in the prolapsed part of the bladder may lead to the formation of stone. In one case of twenty years standing I found twelve angular calculi averaging 1 cm. in diameter, which after the uterus was replaced took up their position on the neck of the bladder, and were some extracted and some passed spontaneously through the urethra.

The peritoneum, considering the strain to which it is subjected, exhibits comparatively little change in texture. Adhesive inflammation of the pocket of peritoneum lying in the

prolapse is most uncommon, as is proved by the clinical fact, that the reposition of a prolapsed uterus, even if one of long standing, is very seldom prevented by agglutination of the opposed peritoneal surfaces.

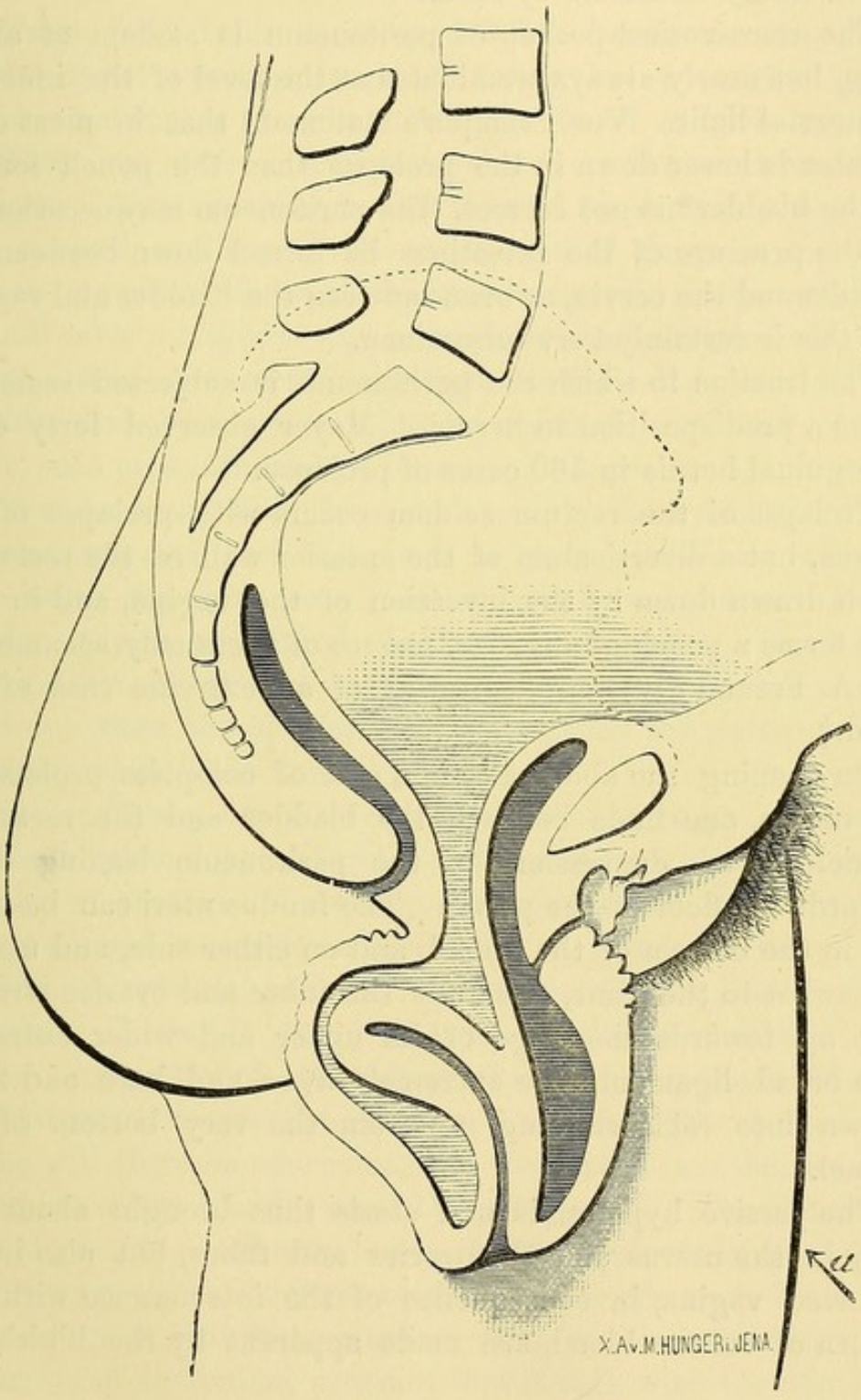


FIG. 93.—The same case in profile

Douglas' pouch, generally extending down behind the pro-

lapsed uterus, to the deepest part of the tumour is generally narrow, and perhaps on that account there are not as a rule any loops of intestine in it. It does, however, occasionally contain some convolutions of the small intestine, indeed may be considerably distended by them.

The utero-vesical pocket of peritoneum is seldom at all so deep, but nearly always terminates at the level of the inner os, its normal limit. Von Franque's statement that in most cases it extends lower down in the prolapse than the pouch formed by the bladder* is not correct. The peritoneum may occasionally by the pressure of the intestines be forced down between the bladder and the cervix, or even between the bladder and vagina, but this is certainly very uncommon.

The traction to which the peritoneum is subjected seems to cause a predisposition to hernia. Meyer observed forty cases of inguinal hernia in 160 cases of prolapse.

Prolapse of the rectum seldom occurs with prolapse of the uterus, but a diverticulum of the anterior wall of the rectum is often drawn down by the inversion of the vagina, and in this, if it forms a pouch of any size, masses of fæces may accumulate. W. A. Freund gives an illustration of an extreme case of the kind.†

On opening the abdomen‡ in a case of complete prolapse of the uterus, one finds between the bladder and the rectum a funnel-shaped depression in the peritoneum leading down towards the floor of the pelvis. The fundus uteri can be made out in the bottom of the funnel, and on either side, and usually somewhat to the front, one finds the tubes and ovaries stretching up towards the edge of its upper and wider entrance. The broad ligaments are extremely tense and here and there drawn into folds slanting up from the very bottom of the funnel.

The passive hyperæmia and stasis thus brought about not only in the uterus and the ovaries and tubes, but also in the inverted vagina, in consequence of the interference with the return of venous blood, are made apparent by the bluish-red

* *Op. cit.*, S. 5.
† *Op. cit.*, S. 30.
‡ Klob. *Op. cit.*, S. 87.

colouring, and by the varicose and often very significant distension of the veins.

§ 168. *Etiology.*—Prolapse of acute or sub-acute origin must be distinguished from the chronic and infinitely more common form.

Sudden falls from a great height, inordinate exertions of abdominal pressure, such as lifting heavy weights continued vomiting or the like, have been found to have led, immediately, or after a very short time, to the occurrence of prolapse. Predisposition to this form of displacement is given by a relaxed condition of the vagina and of the peritoneal and ligamentary attachments of the uterus, such as normally exists in and after childbed—by a moderate retroversion of the uterus, either permanent, or temporary from distension of the bladder—and by any relaxation or defect in the floor of the pelvis, such as a ruptured perineum. Prolapse has also in some very few instances been brought about by the exciting causes above mentioned, and that even in young maidens, without there being any evidence of such predisposing factors. A full bladder may be considered absolutely necessary as a pre-existing condition in all such cases, for the most violent concussion could not when the bladder was empty cause the prolapse of a uterus situated in the normal position.

The conditions for the chronic origin of prolapse are manifold, and are no doubt different in different cases. Even during the successive stages of development of one and the same prolapse, different causes come into action at different times.

§ 169. Simple elongation of the vaginal portion may produce prolapse. It may in doing so cause no alteration of the position in the pelvis of the corpus uteri and the vaginal vault. The distance between the orificium uteri and the roof of the vagina will then be enormous, but there need not be any displacement of the bladder or of Douglas' pouch. The elongated vaginal portion necessarily lies in the direction of the axis of the vagina, and will of course compel the entire uterus to lie in the same direction, and thus place it in a position so exposed to the action of abdominal pressure that it will, with simultaneous inversion of the vagina, move downwards more easily than a uterus in the normal position.

Graily Hewitt gives a drawing of a case which is a good illustration of this condition. I have reproduced the exact outline of this figure without being able to insert all the details. The peritoneal investment does not reach far enough down either in front of the uterus or behind.

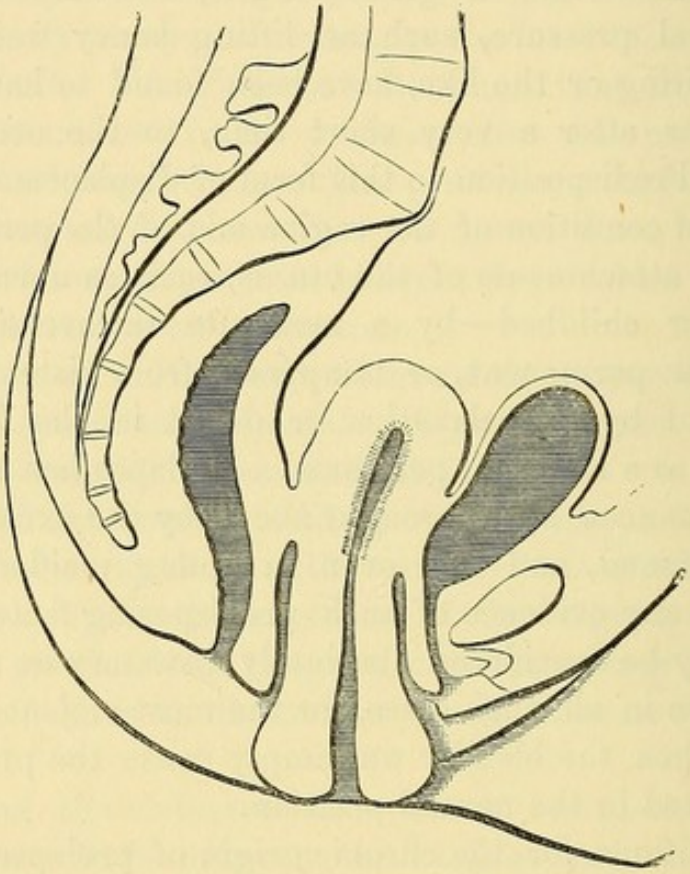


Fig. 94.—From Graily Hewitt's *Diseases of Women*, (Beigel's German translation, Fig. 65), Hypertrophic Vaginal portion in a multipara.

§ 170. If the increase in the length of the uterus is limited to the supra-vaginal part of the cervix, the prolapse is of a totally different type. The distance of the orificium uteri from the insertion of the vagina into the uterus is not increased. The descent of the cervix resulting from its hypertrophy inverts the vagina exactly as if the whole uterus moved downwards. The bladder and peritoneal investment of Douglas' pouch, as they are both attached to the supra-vaginal cervix, of course descend with it.

The fundus uteri may retain its normal position in the pelvis in cases of this kind also, but more commonly the whole organ moves downwards.

That primary hypertrophy of the supra-vaginal cervix does occur and that prolapse of the uterus may result from it, is beyond all question, and as prolapse due to the descent of the entire organ also often leads to secondary increase in the length of the cervix, from these two very different processes conditions may arise which may appear very similar, may perhaps be absolutely identical. We shall return to this matter directly.

§ 171. Hypertrophy confined to the pars intermedia cervicis causes a condition which is very peculiar.

The posterior vaginal vault, as is well known, reaches higher up on the vaginal portion than the anterior, so that the boundary of the supra-vaginal cervix lies lower down in front than behind. In the normal uterus this difference is not very great, but it may be considerable in congenital deformities of the vaginal portion. (Cf. figures 48, 49, 50). It is important for the estimation of hypertrophic conditions to distinguish as the "portio intermedia," the middle section of the cervix which is vaginal behind and supra-vaginal in front, as suggested by Schroeder. Hypertrophy more or less limited to this section leads to a peculiar form of prolapse in which while the posterior vaginal vault is hardly if at all displaced, the anterior, of course with the loss of its vaulted character, protrudes out of the genitals. While the posterior adnexa of the uterus, the rectum and Douglas's pouch, may remain in their normal position, the bladder, together with the inverted anterior wall of the vagina, follows the uterus out of the genitals. Graily Hewitt gives a drawing of a very characteristic case of this sort* the outline of which is given in Fig. 95.

§ 172. In the vast majority of cases of chronic, as of acute prolapse, the essential part of the affection is a descent of the whole uterus. The depressing force in cases of chronic origin is that of intra-abdominal pressure. When the uterus is in the normal position and the bladder empty or but moderately full, intra-abdominal pressure, even if abnormally increased, can only force the uterus into more decided anteversion or anteflexion. Anteversion, when of an abnormal degree, is an

* *Op. cit.*, S. 278.

absolute bar to the occurrence of prolapse, and acute anteflexion seems to act in the same way as regards the possibility of this displacement, for anteflexion of the prolapsed uterus is extremely rare, and of the rare cases in which it has been seen many admit of the explanation that the anteflexion did not exist at the time when the prolapse took place. On the other hand the nearer the corpus uteri approaches the posterior wall of the pelvis, the more closely does the axis of the uterus coin-

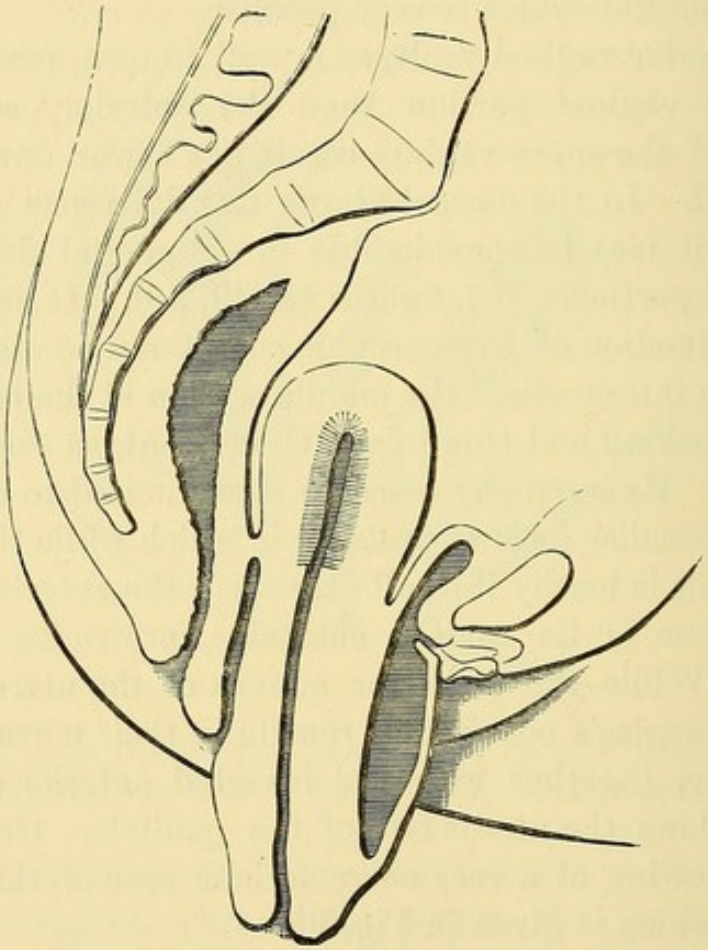


Fig. 95.—Prolapse of two years standing in a woman 47 years of age.

cide with the produced axis of the vagina, and the more easily can intra-abdominal pressure force the uterus, vaginal portion foremost, into and out through the vulva. That form of anteversion of the uterus which is most common, and which is brought about by relaxation of the folds of Douglas (Fig. 59) is in a high degree favourable to the occurrence of prolapse, and must, except in a few cases, be considered as the necessary preliminary condition for this displacement.

The action of intra-abdominal pressure in causing prolapse of the uterus is not only direct upon the anterior surface presented to it by the organ, but also indirect through the bladder which partly overlies this surface, and in the later stages of the prolapse, through the downward traction of the vagina and bladder.

§ 173. The part which the anterior wall of the vagina plays in the occurrence of prolapse of the uterus is in my opinion over-estimated. It is true that prolapse of the anterior wall of the vagina nearly always precedes the appearance of the vaginal portion out of the vulva, but the uterus has already left its normal position, and is in one of retroversion with descent, at the time of the prolapse of the vaginal wall, and we must not date the commencement of the prolapse of the uterus from the time when the latter emerges from the vulva. It is also true that if after replacing a more or less complete prolapse of the uterus we desire the woman to bear down, the anterior vaginal wall almost invariably comes out first; the vaginal portion follows it, and then the posterior vaginal wall with the rest of the uterus. But we must not therefore conclude that it was the traction of the vagina that originally dragged the uterus from its normal position.

The possibility of a uterus normal in position and attachments being dragged downwards by the traction of a prolapsed vagina, cannot be denied, but it is not therefore at all probable that prolapse of the uterus usually commences in that way.

If while the uterus is in the normal position the anterior wall of the vagina is found to be prolapsed—an extremely common occurrence during the latter part of pregnancy and the earlier of the puerperal state—it is by no means necessary to suppose that this condition must be the commencement of prolapse of the uterus. On the contrary we generally find that it disappears of itself, and even if in consequence of deficient puerperal involution it remains constant, even if a part of the relaxed and hypertrophied vagina continues to lie in the vulva, we often enough find that the uterus preserves its normal position in spite of the persistent prolapse of the vagina. If, however, we do find the uterus lying close to the vulva behind

the prolapse of the anterior wall of the vagina, this wall, whose points of insertion then lie remarkably close together, is usually so relaxed, that it is absolutely impossible for it to exert any traction upon the uterus at all. The uterus and the vagina do not drag on each other until they lie well outside the vulva.

§ 174. We must look for the cause of prolapse of the uterus in some loosening of its essential attachments. The direct cause of the displacement which is, as it were, the preliminary stage of prolapse, is relaxation of the folds of Douglas. The tension of these folds was proved by the experiments of Kiwisch Savage and others, to be the principal obstacle to the artificial production of prolapse, in effecting which, once they had been divided, there was no difficulty. The displacement of the uterus necessarily arising from relaxation of the folds of Douglas leads to prolapse of the anterior vaginal wall, not the latter to the former; this displacement diminishes to one-half or one-third the distance which previously separated the uterine and pelvic insertions of the vagina, and so forces the anterior wall of the vagina, and the wall of the bladder attached to it, to bulge out into the lumen of the canal.

A case that came under my observation some years ago is very instructive as regards the causal relation between the anterior inferior position of the vaginal portion and prolapse of the anterior vaginal wall. A woman, who had not borne any children for ten or twelve years, and who had never had prolapse of the uterus, had for some weeks been aware of a prolapse of the anterior wall of the vagina which caused her a good deal of inconvenience. On examination the vaginal portion was found low down close behind the prolapsed vaginal wall. The anteposition of the uterus was caused by an ovarian tumour four to five centimetres in diameter lying in Douglas' pouch. The tumour was easily replaced, when the uterus and with it the vagina, immediately passed into the normal position. The tumour remained up above the pelvis, and the prolapse of the vagina did not recur.

When the uterus is in retroversion, its normal attachments relaxed, and the vaginal portion lying near the vulva, unless the pelvic floor prevent it increased intra-abdominal pressure

may easily force first the anterior vaginal wall, and then the portio vaginalis, out of the external genitals.

Once part of the cervix and a segment of the bladder with it lies outside the genitals, intra-abdominal pressure finds a new means of action; the bladder and its contents are then exposed to the full force of this pressure, and are affected by every increase in it, while the protruding surface of the inverted vagina and of that part of the uterus which is already prolapsed are under atmospheric pressure only. The wall of the bladder yields to the one-sided excess of pressure of its contents, and drags the vaginal wall and the uterus attached to it downwards.

The greater the existing prolapse, the greater will be the effect of the direct and indirect action of the intra-abdominal pressure upon the uterus, until the inversion of the vagina is nearly, if not quite, complete. As soon as the attachments of the vagina cannot give way any more, the vaginal wall itself has to bear all the remaining pressure. If the tissue of the vaginal portion yields, the inversion of the genital canal extends to the cervix uteri, causing decided ectropion of the os, and may proceed to almost complete inversion of the cervix (Klob).

§ 175. The great increase in the length of the cervix generally found in prolapse of long standing, is partly the effect of hypertrophy arising from the great irritation to which the prolapsed uterus is exposed, partly that of the great venous congestion which is rarely absent, and partly the natural result of the direct tension to which the uterus is subjected in the direction of its length, by the vagina below and its own normal attachments above. The share of the last two factors in causing this elongation is so great that the uterus, when it is replaced and thereby relieved from the venous congestion and tension, often becomes several centimetres shorter in a few days.

According to this view the hypertrophy, and more particularly the elongation of the cervix, are results of the prolapse. Some authors, Huguier for instance, and quite recently Schroeder also, have advanced the idea that the hypertrophy of the cervix is the cause of the prolapse of the uterus. Schroeder also thinks that the origin of the greater number of these dis-

placements is due to the prolapse of the vagina, the traction of which upon the cervix uteri causes the latter to hypertrophy and thereby to prolapse, while the position of the fundus uteri remains nearly or quite normal. Complete prolapse of the uterus, according to Schroeder, is generally caused by the fact that the uterus after being hypertrophied and elongated, diminishes in size, and that, while the position of the os uteri remains about the same, that of the fundus uteri becomes lower and lower as the diminution goes on; ideas which, in my opinion, do not accord with the facts.

As has been already stated exceptional cases are met with, in which the examination proves that the hypertrophy of the cervix has been the cause of the prolapse; it does not necessarily follow that the fundus has retained its position in the pelvis. There are other cases, also exceptional, in which while there is considerable hypertrophy of the cervix the fundus uteri has remained in about its normal position; in none of the latter is there sufficient ground for supposing that hypertrophy of the cervix has been the cause of prolapse. We owe the best description of a remarkable case of this kind to Virchow.* In it the whole of the vagina was inverted, the uterus was six and three quarter inches long, the fundus being situated not merely as high but somewhat higher than normal. Virchow considered that this uterus had probably been for years in a position lower than normal, and had absolutely been raised up again by the hypertrophy. I believe myself that this is the true explanation of most cases of the class just mentioned. If the uterus is so far prolapsed as the complete inversion of the vagina will allow it to be, and the hypertrophy of the vagina and cervix uteri continues to increase under the continued traction and other irritation, then, as the tension of the vagina is entirely longitudinal while its hypertrophy is principally circular, elongation of the uterus will cause the fundus to rise up again into the pelvis. The description of such a case as "without descent of the fundus" is correct enough as applied to its ultimate condition, but not so for its commencement.

§ 176. As it would appear from what has been said, that

* *Ueber Vorfall der Gebärmutter ohne Senkung ihres Grundes. Gesammelte Abhandl*, S. 812.

relaxation of the attachments of the uterus, more particularly of the folds of Douglas, is the chief cause of prolapse of the uterus, and that, certain cases excepted, retroversion with descent is the initial stage of prolapse, the further question arises, why the condition of retroversion with descent, in some cases either remains stabile or developes into permanent retroflexion, and in others results in prolapse of the uterus.

The answer to this question is to be found in three important facts proved by statistics.

1. In virgins and women who have never been pregnant, retroversion is common enough, prolapse extremely rare. In women who have borne children not only retroversion but prolapse also is a common affection.

2. Again, in women who are in easy circumstances and lead a comfortable life, even among such as have had many children, prolapsus uteri is rare. It is, on the other hand, common enough among women of the poorer, and especially of the hard-working labouring classes of the population.

3. Even in the wealthy classes prolapsus uteri is more frequently met with in old women.

§ 177. In regard to the first of these facts. The puerperal state favours the origin of prolapse because in the first place it favours that of retroversion. A very large number of retroversions may be traced by their history directly back to some puerperal condition premature or otherwise (*vide* pages 197-198) and retroversion recurring soon after confinement is far more often accompanied by descent than when it happens to a woman who has never been a mother, for all the attachments of the uterus have been relaxed by the tension, extension, and change in position incident to the gravid state. The sooner retroversion occurs after childbed, the more easily, on the average, is prolapsus uteri developed from it.

In the second place, it has already been admitted that in the puerperal state, the prolapsed anterior vaginal wall may in some cases absolutely draw the uterus down out of its normal position. The wide roomy and relaxed vagina is much more prone to prolapse soon after childbed, in any case where there has been a previous retroversion; the bladder, stretched out during pregnancy, is then relaxed also and, its contents

being under the influence of intra-abdominal pressure, helps in the further depression of any uterus already lying in a position of retroversion with descent.

Thirdly, in women who have been confined, the vulva, even when there has been no loss in the continuity of the perineum, is not infrequently in a patulous condition. In ruptures of the perineum, however slight, this is always the case. Not only because when the laceration is extensive the anterior wall of the vagina is deprived of an essential support, but in consequence of the gaping condition of the vulva and the free exposure of the anterior vaginal wall to the atmosphere, this wall, the uterus, and the bladder, are subjected to the detrimental action of abdominal pressure. When the vulva is closed in the normal way the pressure in the vagina varies with that in the abdomen, every increase in the intra-abdominal pressure is accompanied by a corresponding increase in the pressure in the vagina. When the vagina communicates freely with the atmosphere any such increase in intra-abdominal pressure is not met by any opposing pressure in the vagina. The elasticity of the parts affected is the only resisting force, and is, in the course of time, easily overcome. That prolapse does not invariably occur when there is a rupture of the perineum depends principally on the existence of old parametritic fixation of the same date as the perineal rupture.

§ 178. Regarding the second statement in § 176; in every case of relaxation of the folds of Douglas, the question whether retroflexion or prolapse is ultimately the stabile position of the uterus, depends to a great extent upon the personal conduct and manner of life of the woman affected.

Whenever the folds of Douglas are relaxed, the repeated filling and emptying of the bladder and rectum is quite enough to cause slight retroflexion. If this displacement at first causes little or no inconvenience—if the woman is not accustomed to let any little discomfort interfere with the performance of her ordinary duties, though these duties entail severe, or at all events, considerable bodily exertion—or if she is compelled by her condition of life to look after her household, or do her work in spite of some suffering—her uterus, lying as it does in the axis of the vagina, will be continually forced down into it by the increased

abdominal pressure, and with the inverted vagina, will be at last driven out of the vulva.

On the other hand, if the retroversion from its very commencement is accompanied by such serious trouble as compels the woman to keep quiet—if she is in such a position in life that she can, and does take great care of herself for very slight ailments—or if though she ignores the discomforts which are caused by the retroversion, the extra strain thrown upon the floor of the pelvis is no more than is caused by change of posture, walking or driving about, or moderately tight lacing—the uterus remains in retroversion, from which, by the descent of the fundus, a constantly increasing retroflexion is gradually developed.

Once decided retroflexion has occurred, the uterus, even without any peritoneal adhesion of the fundus to the posterior pelvic wall, is tolerably secure from the danger of being forced into prolapse, even by very great abdominal pressure. As soon as the corpus uteri is depressed into the hollow of the sacrum, the angle which it makes with the vagina, though in the opposite direction is, just as it was in the normal position, again too great for any direct pressure to drive the corpus uteri in the direction of the vulva; it simply drives the fundus deeper down into the cavity of the sacrum.

§ 179. (3) The disposition to the occurrence of prolapse of the uterus also increases in advanced age. This is principally due to senile atrophy of the pelvic floor and particularly to the disappearance of fat from the nates, thighs, and external genitals; *the closure of the genital fissure is destroyed;* any increase in abdominal pressure affects the vagina and uterus from one side only, and the uterus, which has perhaps already been for some time in a position of retroversion with descent, has to yield before this one sided pressure.

§ 180. Abdominal tumours, may in the course of their development force the uterus downwards, and including ascites must be mentioned as causes of prolapse, in addition to the ones already given.

§ 181. *The symptoms of descent of the Uterus* are those of the retroversion and those of any accidental complications. In *acute prolapse* the symptoms are violent pain, vomiting, giddi-

ness, and swooning, followed by retention of urine, and occasionally by symptoms of incarceration and peritonitis. *Chronic prolapse of the uterus* commences with feelings of weight in the hypogastrium and of tension in the hypogastric sacral and inguinal regions. To this is added frequent desire to make water, difficulty in doing so, and very often an incapability of emptying the bladder completely.

Defæcation which is often difficult, much standing or walking about, or any fatigue, makes these troubles worse. They always are so at each menstrual period, but after a protracted rest they may entirely disappear, particularly if when the patient lies down most of the inversion of the vagina is taken up and the uterus returns into the pelvis.

The symptoms already mentioned may in themselves be a heavy burden to bear; sympathetic disturbances, such as nervous dyspepsia, gastralgia and indeed all forms of neuralgia, general nervousness, and intense depression, may also result from prolapsus uteri. Such troubles, however, are even in cases of extreme prolapse, very often slight or almost absent, and the only discomfort is the mechanical one of the external tumour.

It is often remarkable how very little the genital functions themselves are interfered with, unless the prolapse is complicated by metritis or oöphoritis; menstruation is more often scanty than profuse, and if the uterus can be properly replaced and there are no complications, capability of conception need not be interrupted. If conception does occur the uterus continues to come down in the day time, until some day it is prevented doing so by its increasing volume. The pregnancy may then take the normal course. If, in any exceptional case, the return of prolapsed uterus is prevented by its increased size, symptoms of incarceration may occur, or the result may be abortion. It is quite exceptional for pregnancy to be completed in a prolapsed uterus.

When prolapse has existed before a confinement it usually recurs after it. Good nursing during the puerperal state and great circumspection during the entire period of involution may effect a cure.

§ 182. The *diagnosis* of prolapsus uteri, as that of every

other displacement, is altogether objective. Subjective symptoms, etiology, etc., can at the most be foundations for suspicion. Inspection is important in the diagnosis in addition to palpation, as by it we can generally distinguish the external surface of the swelling formed by the inverted vagina, from that of any other tumour which might lie in front of the genitals. The smooth, dry surface of the mucous membrane, the remains of the columnæ rugarum which, even when the inversion of the anterior wall is complete, are generally recognisable at the base of the swelling, the os uteri to be found at the apex of the tumour, are generally sufficiently characteristic. On palpation it is found that the vagina is reflected downwards close all round the introitus, and the recognition of the inversion is thus ensured. By palpation of the tumour, which is generally a soft elastic almost doughy mass, the uterus can be recognised inside it by its own characteristic shape; its fundus extending upwards towards the base of the swelling, or beyond it into the pelvis; the introduction of the sound into the cavity of the organ completes the proof. The fundus, if it cannot be grasped in the tumour, can be reached per rectum. A properly curved sound passed through the orificium urethræ will show the abnormal direction of the urinary canal and the share the bladder has in the formation of the tumour.

A median section drawn from examinations made on a living woman, will be the best illustration, not only of the manner of diagnosis, but also of the type of the commonest form of prolapsus uteri.

Mrs. P., from L. A married woman, thirty-five years old, presented herself at the Clinic on the 10th of October, 1876. In front of her genitals she had a tumour which measured seven centimetres in length and six centimetres from before backwards. The vagina was completely inverted all round, the perineum had not been lacerated but was atrophied. The orificium uteri formed a wide opening at the apex of the tumour. The cervical canal measured seven centimetres, the corpus uteri five centimetres. The anterior wall of the rectum was in its normal place, on the other hand the fundus of the bladder was in the anterior part of the tumour. The course of the urethra was backwards and downwards. The distance

from the mouth of the urethra to the lowest part of the fundus of the bladder was seven centimetres, and that to the highest part of the crown was eleven centimetres. The sketch has been laid down from the measurements taken, exactly to a scale of one-third.

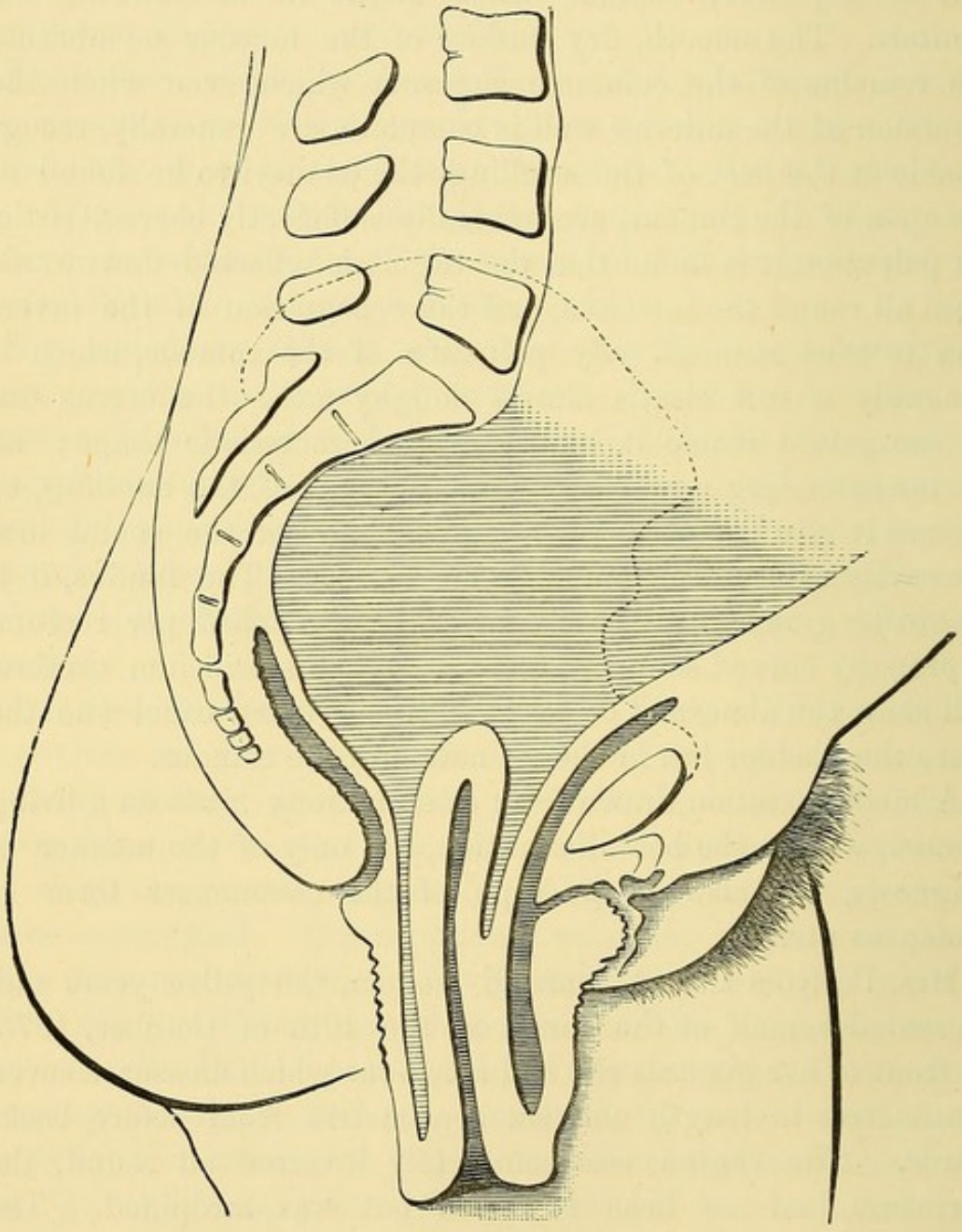


FIG. 96.—Incomplete prolapse of the uterus with complete inversion of the vagina.

The two pouches of peritoneum could not, of course, be measured while the woman was alive, and the accuracy of the sketch requires on that account some further explanation. We know that the peritoneal investment of the uterus is firmly

attached to the anterior and posterior surfaces of the organ, and we know further that in prolapse of the uterus the peritoneal investment passes down with the prolapsed uterus. That the uterus of this woman was completely invested by peritoneum in the normal way could be ascertained with certainty by combined rectal, vaginal, and abdominal palpation after perfect reposition of the organ in the normal position. The peritoneum was therefore represented in the sketch, according to its normal attachments, continued from the uterus on to the posterior vaginal vault behind, and passing on to the bladder in front at the level of the inner os.

Mrs. P. was discharged with her uterus supported in the normal position by a sledge-shaped pessary. The elongated uterus was soon reduced to almost the normal length. She afterwards conceived, and was delivered in the coccygeal position. She again came under observation at my Clinic, suffering from puerperal septic infection, and after a long illness from endocarditis, pneumonia, and affections of the joints, died. At the post-mortem the uterus was found in good involution, the cervix alone being of more than normal length.

The diagnosis of those rare cases in which hypertrophy of the vaginal portion or of pars intermedia cervicis is the essence of the affection, will be made clear by referring to figs. 94 and 95. The apparent difficulties in diagnosing whether we have to do with prolapse or hypertrophy of the cervix, are I think rather obscurities in the definition. Whether, and to what extent, the hypertrophy of the cervix so often existing in cases of prolapse of long standing, is the effect or cause of the displacement, cannot be always decided on the first examination If within a few days after reposition the cervix becomes shorter, as it most commonly does, the fact should be considered a proof that the previous elongation was the *effect* of the prolapse.

It has been asserted by some authors that one diagnostic mark of prolapse is that the tumour is reducible; but the tumour should never be reduced till the diagnosis has been made. In the first place, from doing so mistakes might arise; for there are other tumours that can be reduced, and reposition is not possible in all cases of prolapse of the uterus; secondly, if the prolapse is reduced before one knows all that is lying out-

side the vulva, the opportunity of ascertaining what structures were comprised in the tumour is lost, and thirdly, one may set up some injury by reposition or by attempts at the reposition of an unknown body. Prolapse of the vagina, prolapse of the inverted uterus, prolapse of a uterine polypus, tumours of the vagina, or of the vulva, are all conditions which on a superficial examination may be mistaken for prolapse of the uterus.

§ 183. *Treatment.*—The prophylaxis of prolapse of the uterus consists in careful management of the puerperal state, even after abortion; in the prevention of lacerations of the perineum and in the accurate union of such lacerations, even when most insignificant; and in the timely and appropriate treatment of retroversion or descent of the uterus. It is most important in the earlier stages of the latter to endeavour to restore the retractor uteri and the other normal supports of the uterus to their original energy. Compare § 136.

§ 184. The principal indication for treatment of an existing prolapse of the uterus is the reposition of the organ in the normal place. Preparatory treatment is seldom necessary; any ulceration there may be of the vagina or portio vaginalis will heal better when the uterus has been replaced, than while it is prolapsed; and reposition is the best treatment for the inflammation of the prolapsed uterus—and for its hypertrophy.

The intestines and the bladder must be emptied before the reposition, any impediment from intra-abdominal pressure may be obviated by the knee-elbow position or chloroform narcosis and even in difficult cases, the reposition may be rendered possible by keeping the woman at rest on her back with her sacrum elevated for several hours or days, so that the loops of intestine which have occupied the normal seat of the uterus may gravitate to the upper part of the abdomen.

In carrying out the reposition, the finger tips laying hold of and moderately compressing the prolapse the vaginal portion being directed towards the hollow of the hand, by a constant and gradually increased pressure push the tumour up towards the vulva in a direction at first somewhat backwards and afterwards towards the promontory. In the easier cases where the hypertrophy of the vagina is slight, one may apply the force to the lowest part of the tumour, to the vaginal vault and

vaginal portion; if the prolapse is very voluminous and the wall of the vagina rigid, the tumour must be laid hold of near its base, and that part of the vagina nearest the vulva be re-inverted first.

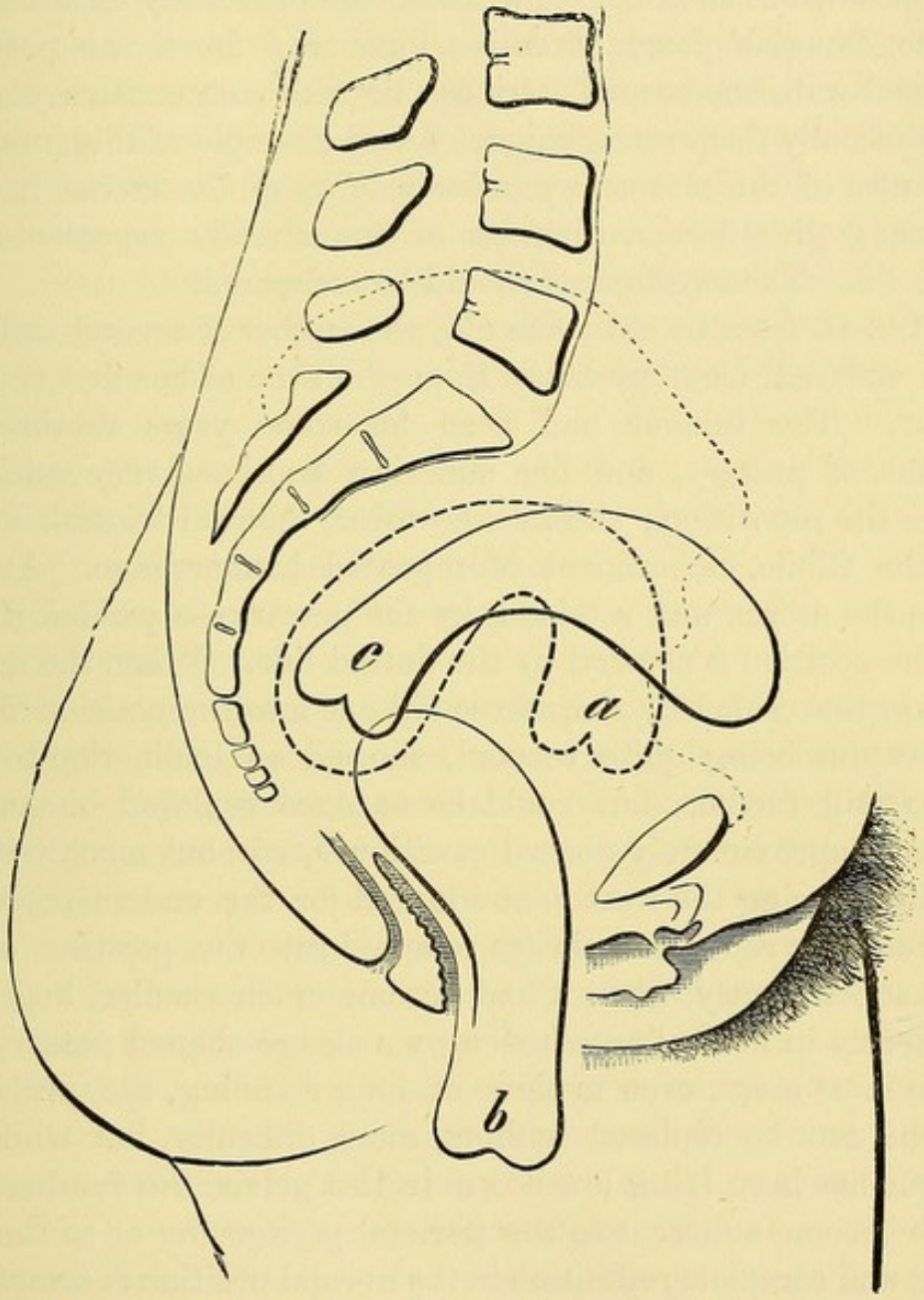


FIG. 97.—*b*. Prolapse of the uterus; *a*. Retroflexion in which it was supported by the pessary; *c*. Approximately normal position.

The uterus, when first returned into the pelvis, generally takes up a retroflected position, the fundus being still turned backwards towards the sacrum. The reposition is completed by the aid of the other hand acting from the hypogastrium. (*Vide* Chap. VIII., Figs. 65-69).

§ 185. When a prolapse has been reduced by some ignorant person who has simply stuffed back the external tumour, and shoved a ring underneath it, the uterus is invariably found in retroflexion. Very many cases come under treatment in this condition, but as in consequence of the previously existing prolapse, Douglas' pouch extends a long way down the posterior vaginal wall, the corpus uteri can lie with comparative comfort in unusually deep retroflexion. As an example of this condition and also of the *enormous passive mobility of the uterus* in such cases, I give here a diagram of one already represented in Fig. 60. The two figures should be compared.

Mrs. H. from G., 42 years old, the mother of several children, had suffered from prolapse from the time of her first confinement. The tumour had been for some years retained by means of pessary, and her suffering had been very much less since the reposition; she was, however, induced to seek advice at the Clinic, on account of repeated hæmorrhage. At that time the uterus was retained by the pessary—a padded ring—in the position *a* marked by the dotted line. When the instrument was removed, the uterus fell out into the position *b* and, the vagina being quite relaxed, showed an inclination to prolapse still further, but could be at once replaced bimanually in an approximately normal position *c*, without much trouble. At first during the treatment adopted for the endometritis, the uterus after reposition always relapsed into the position *a*, but was subsequently, when it had become much smaller, kept permanently in normal anteflexion by a sledge-shaped pessary.

In most cases, even in those of long standing, the prolapsed uterus can be replaced without much difficulty, but while the uterus has been lying low down in the pelvis the fundus may have become adherent to the parietal peritoneum or to the rectum, and complete reposition in the normal position is sometimes prevented in this way. An insurmountable obstacle to the reposition may exist in the close adhesion of the whole of the peritoneal surfaces of the vagina and uterus in Douglas' pouch which may be lengthened out to the apex of the prolapse. Hypertrophy of the vagina also may make reposition impossible, less perhaps by the increase of its volume than by the rigidity of its abnormal shape. Of the treatment of prolapse of

the uterus when irreducible, we shall speak at the close of the chapter.

§ 187. *The retention of the replaced uterus* in a position either normal, or at all events similar to the normal one, is generally more difficult than the reposition.

The methods of treatment adopted for this purpose, are either operative, or consist in the use of some mechanical means of support. The operative methods are generally described as radical, and the others as palliative; but as these descriptions give rise to prejudices in regard to both forms of treatment that are not altogether justifiable, it is better to discard them. The various measures employed for the cure of prolapse are:—

1. Amputation of the lower end of the uterus.
2. Narrowing the vulva.
3. Narrowing the vagina.
4. Combinations of the above methods.
5. Supporting the uterus by pessaries.
6. Peritoneal fixation of the uterus.
7. Extirpation of the uterus.

§ 188. Amputation of the lower segment of the uterus has been recommended as a radical cure for prolapse, particularly by Huguier, who, under the mistaken idea that hypertrophy of the cervix was the essential cause of prolapse,* used to remove the vaginal portion, sometimes the whole collum, and sometimes even part of the corpus. Now, as the increase in the length of the collum uteri is generally secondary, and what is much more important as regards the treatment, generally diminishes, or indeed disappears altogether, soon after reposition is carried out, prolapse cannot in my opinion, be any indication for cutting away as much of the collum uteri as is possible after detaching it from the bladder.

Amputation of the lower segment of the uterus in prolapse must be limited to those cases in which the portio vaginalis is increased in length, or in which one or both lips of the os are so thickened by ectropion, that their reduction to their normal size and texture cannot be expected.

If the vaginal portion is to be amputated *in toto*, the best

* Out of thirty cases of prolapse, he thinks that hardly one was caused by actual dislocation of the organ. *Gaz. hebdom.*, V. 20, 1858.

method is by a circular incision just below the level of its vaginal attachment. To arrest the hæmorrhage, to promote healing and prevent infection, and with a view to the formation of a well shaped stump, it is well to put in sutures after

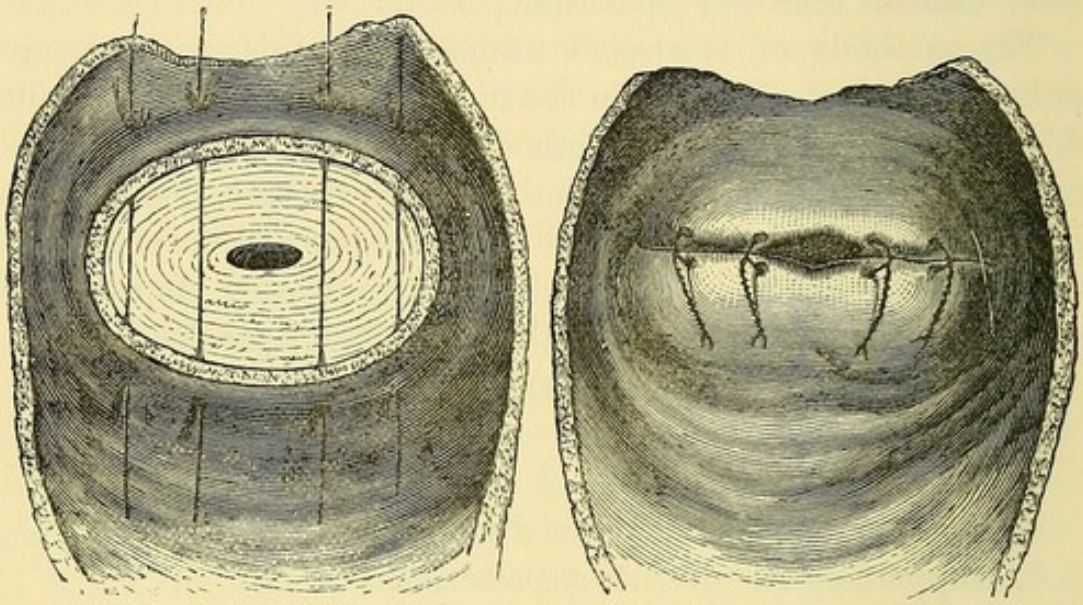


FIG. 98. FIG. 99.

Sutures in amputation of the vaginal portion, (after Sims).

the amputation. One may either simply cover the stump in the way Sims does, by uniting the opposite edges of the wound in the vaginal mucous membrane, leaving a gap in the middle for the os uteri, as the above figures show; or still

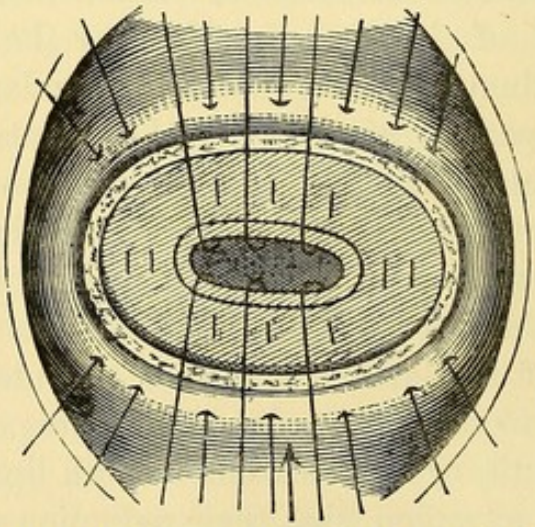


FIG. 100.—Sutures after Hegar's method.

better, as Hegar does, include not only the edge, but also the deeper part of the wound in the stitches, in the middle of the wound uniting the mucous membrane of the cervix to

that of the vagina, and at the sides, only that of the anterior vaginal vault to that of the posterior. Figure 100 illustrates the method recommended by Hegar.

If the ectropion of the lips is extensive, the method of operating given by Simon seems to be the best. A thick wedge is cut out of the substance of each lip, the broad base of each wedge being the everted labial surface, while the acute apex is in the tissue of the cervix. Only so much of the

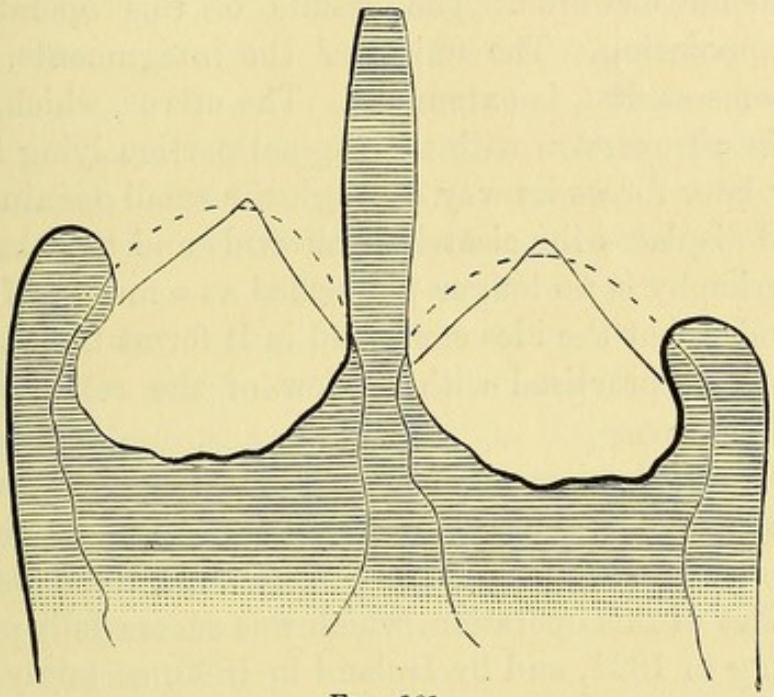


FIG. 101.

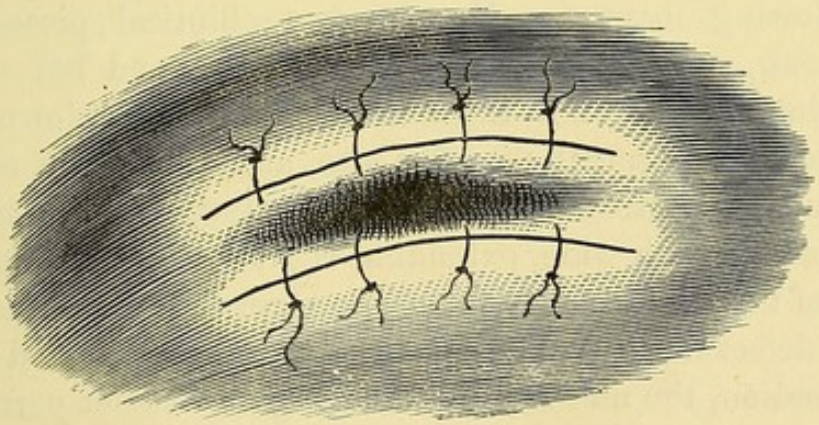


FIG. 102.

Wedge-shaped excision of the lips of the os uteri, (after Simon). Natural size.

mucous membrane is left on the cervical and vaginal sides of either lip, as is required to unite the opposite edges of the wound. Figures 101 and 102 indicate the direction of the incisions and the stitches better than any detailed description.

§ 189. *Episiorrhaphy.* Narrowing the vulva for the retention of the previously prolapsed uterus, was first practised by Fricke and afterwards, with various modifications, by many other operators. The posterior two-thirds of the labia majora were freely denuded, so that the wounds passed into each other at the anterior margin of the perineum, the pudendal fissure so freshened was then closed by deep stitches, preferably by quill sutures, in such a way as to add considerably to the length of the perineum forwards. The results of this operation have been disappointing. The union of the integuments, however firm it seems at first, is extensible. The uterus, which of course remains in retroversion with the vaginal portion lying forwards, sooner or later forces its way through the small opening left in front, and displaces the cicatrix backwards and to either side.

Episiorrhaphy is no longer performed as a means of narrowing the vulva, but the idea contained in it forms the basis of the operations now practised with a view of the retention of the prolapsed uterus.

§ 190. *Elytrorhaphy, colporrhaphy.* Narrowing the vagina by operation, with the object of making its inversion impossible, and thereby prolapse of the uterus impossible also. The original idea of this operation, which was successfully performed by Heming in 1831, and by Ireland in 1835, certainly belongs to Gerardin* and Marshall Hall.† Dieffenbach performed it in the following manner:—He cut two elliptical pieces, three inches long, and two broad, out of the right and left sides of the vaginal wall, and if the anterior wall hung down like a pouch, a small segment out of it also, and united the edges of the wounds by stitches; or he cut out a strip of mucous membrane half an inch wide, extending right round and the entire length of the vagina. He found, however, that after the longitudinal defect had been united by sutures, and healed by the first intention, the narrowing of the vagina was not permanent, and therefore abandoned this method, and got better results with the actual cautery, drawing from three to six broad stripes with a red-hot iron, the whole length of the vagina, from the vaginal portion to the labia.

* *Harless, Jahrb.* X. 1825.

† *Loc. cit.*

Other operators have tried to effect the narrowing of the vagina in an immense variety of ways, but the idea of preventing the return of the prolapse of the uterus by simply narrowing the vagina, is not one in which many people have now much confidence. I shall make some special mention further on of two well conceived operations, recently devised, the one by Marion Sims, the other by Winckel.

§ 191. The methods of operating for prolapsus uteri, which are now most generally and successfully adopted, consist in narrowing the posterior wall of the vagina and at the same time making an addition to the perineum. The most important are those of Simon, Hegar, Bischoff, and Graily Hewitt.

To make the descriptions more concise, I have given in fig. 103 a diagram of the different shapes of the surface freshened. The outline of which the upper limit is marked *b c b*, is the shape of the freshened surface in Simon's colporrhaphia posterior. The triangular figure whose apex is marked *d*, is the shape of the freshened surface in Hegar's colpo-perineorrhaphy; the figure *g e e g* is Bischoff's colpo-perineoplastik. The lower margin of the freshened surface *a a* is in all three cases situated at the posterior commissure, sometimes extending some distance up the labia. Graily Hewitt's operation is illustrated in figures 104 and 105.

The prolongation of the freshened surface to a point in the direction of the anus *A*, as shown at *o* in fig. 103, prevents the formation of a lappet of skin at this spot when the frenulum is intact. It need hardly be said that the shape of the surface freshened may be materially different at the lower margin, when from previous laceration there is any loss of the substance of the perineum.

The patient, under chloroform, is placed on her back, with the sacral region right at the edge of the operating table, and the femora are held upwards and outwards by assistants on either side, as for lithotomy. The operator takes a seat facing the field of his work, with a window behind him. Each of the assistants has one hand free to manage the Simon's retractor with which the anterior wall of the vagina is held up, or to receive from the operator and take charge of the forceps or hooks used in fixing the field of operation. A third assistant

is required to supervise the narcosis, another to sponge the wound and help the operator directly in other ways, and another to hand the instruments; in all five assistants are necessary.

The most thorough antiseptic precautions are of course

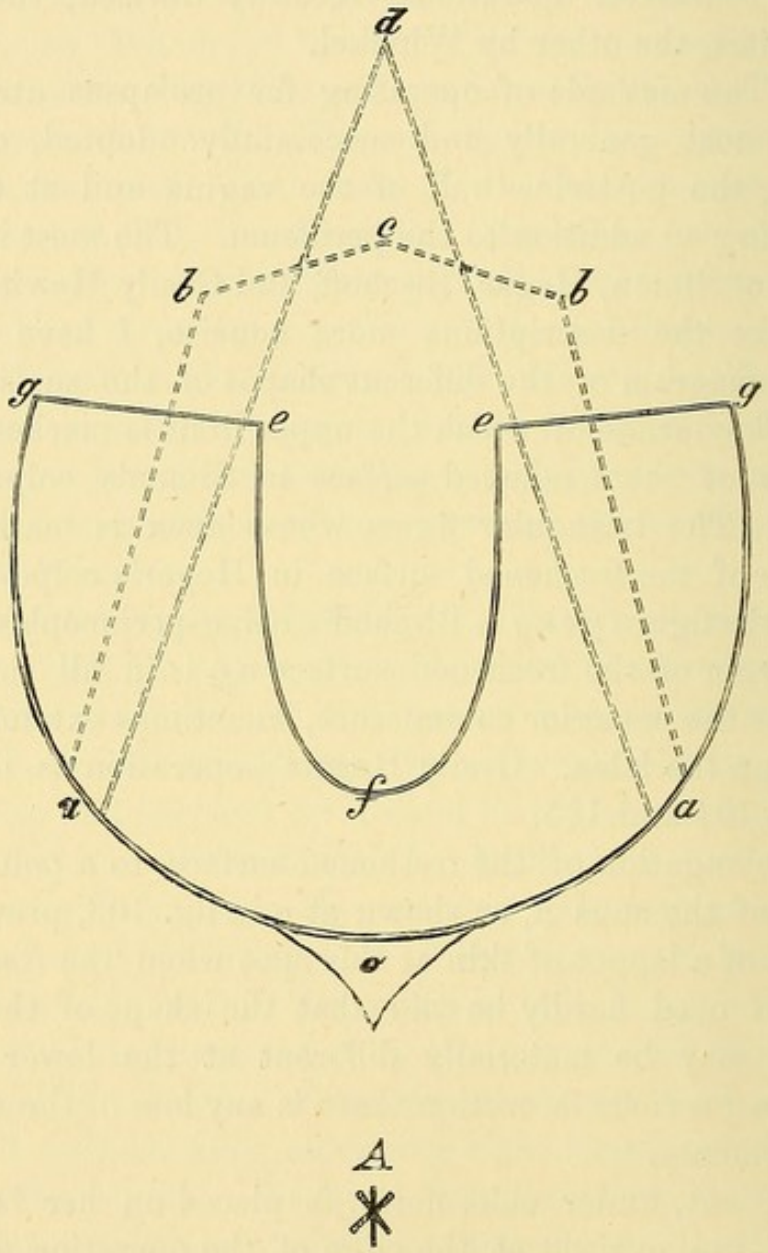


FIG. 103.—Diagram of freshened surface in operations for prolapse. *b c b* Simon's; *d* Hegar's; *g e e g* Bischoff's; *A* Anus.

understood, it may however be mentioned that for these operations, sprinkling or occasionally washing down the field of operation with two and a half per centage carbolic acid solution or chlorine water generally takes the place of the spray. Immediately before the commencement of the operation, the

vagina and vulva are carefully washed with five per cent. carbolic solution by means of sponges or prepared wadding.

In Simon's operation, the vagina being held open by two lateral retractors in addition to the anterior one, and the posterior wall being, if necessary, held up forwards by the finger in the rectum, the freshening is commenced by the incisions *c b*, five or six centimetres above the posterior commissure, the incisions *b a* are then made, and the curved incision *a a* along posterior commissure completes the boundary of the surface to be freshened. From this surface the mucous membrane is removed in strips, through Simon's fenestrated speculum. The wound is then united in the median line, by deep sutures of silk passed in from left to right and coming out near the middle of the wound where they are free for a short distance, and by superficial sutures placed between the others. The operation is completed by superficial stitches in the perineum.

Hegar, after the anterior vaginal retractor is introduced, lays hold of the vaginal wall with a pair of bullet forceps at *d* six centimetres above the commissure, or when the prolapse is large even higher up, two to three centimetres below the vaginal portion. The part laid hold of, is then drawn towards the vulva, and at the same time elevated, while similar forceps, applied to the inner surfaces of the right and left labia, about three to four centimetres from the raphe, are depressed in such a way that the lower part of the posterior vaginal wall is stretched perpendicularly in front of the operator. The two marginal incisions *d a* are then made, the point of the flap is seized at *d* and it is separated by a series of incisions from the right and left. When about two thirds of the flap has been detached in this way, the incision *a a* at the lower margin, is made, and the rest of the separation completed from it. The surface of the wound is levelled by the scissors, and any large exposed veins are cut open to let the blood escape, and the wound is closed with wire or silk sutures, as in the former method.

In Bischoff's operation, an incision is first carried round the lower edge of the columna rugarum posterior, *e f e* in the figure. This flap, six or eight centimetres long, and four to six centimetres broad at its upper part, is left for the time un-

disturbed in its attachments. The incisions *e g* are then made along the lateral vaginal wall on either side, right down to the labia, (in the figure the incisions *e g* are foreshortened): the flaps *f e g* are detached, the external marginal incision carried out, and the freshening of the surface thus defined completed. The columna rugarum is then separated from the parts below it so as to form as thick a flap as possible, the lateral edges of which, first on the left side and then on the right, are united with the edge of the corresponding incision *e g* in the lateral vaginal wall. Finally the perineum is sewn up, *a* to *a* and *g* to *g*, the corresponding surfaces of the opposite sides being brought into apposition by deep sutures of silver wire, which are passed so far in that they to some extent embrace the flap

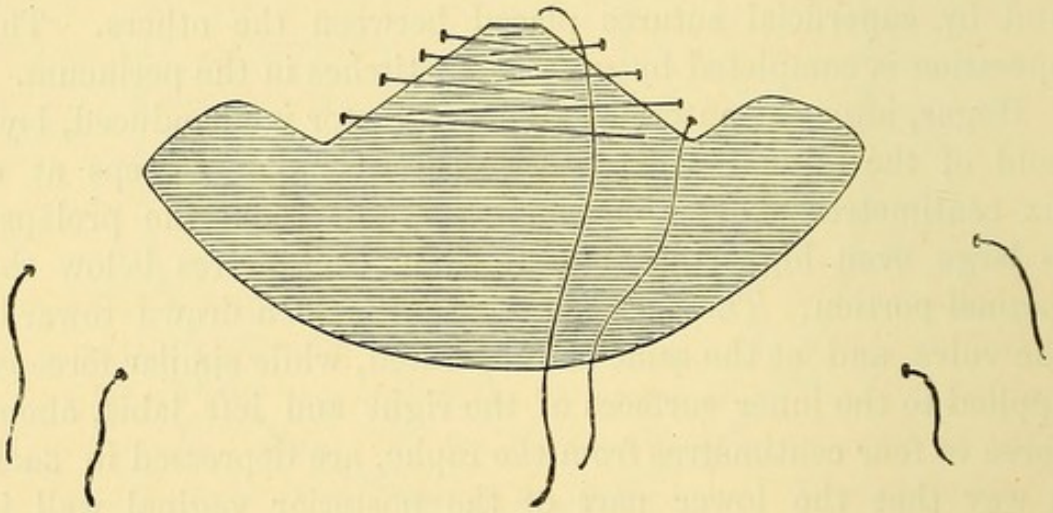


FIG. 104.—Median colporrhaphia posterior. (Graily Hewitt).

e f e. Directly before closing the wound, Bischoff disinfects it with ten per cent. carbolic solution.

Graily Hewitt operates in various ways. In some cases he only does a long episiorrhaphy, continuing the freshening for an inch or an inch and a half higher up, and passing shot or quill sutures very deeply through the wound.

In his later operations he has combined this method with a colporrhaphia posterior, reaching nearly up to the os uteri.

He has two ways of doing this latter operation, either median as represented in the adjoining figure 104, or by removing two triangular strips out of the posterior wall of the vagina so as to leave the columna rugarum posterior as shown in fig. 105. In

either case the freshened vaginal surface is drawn together by furrier's (glover's) stitch with strong silver wire in the way shown in fig. 104. The wound in the perineum is united by deep sutures with superficial ones between them.

§ 192. Of the methods just described, Simon's and Hegar's are the ones I have tried myself. Having in earlier years repeatedly performed episiorrhaphy with very incomplete, because only temporary, success, I gave up treating prolapsus uteri by

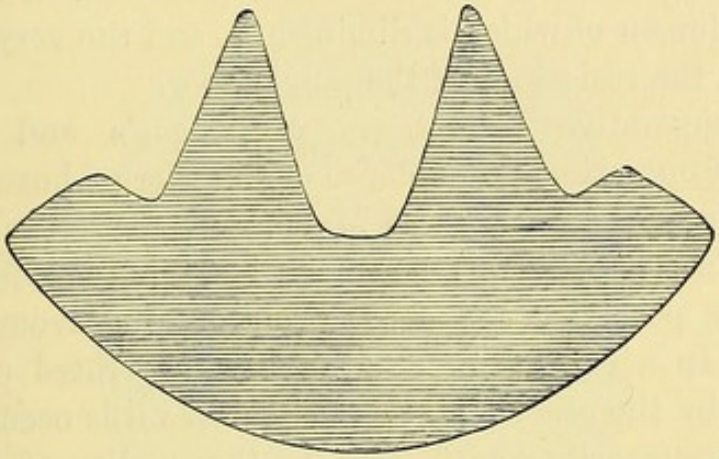


FIG. 105.—Colporrhaphia posterior, leaving the columna rugarum. (Graily Hewitt).

operation until I saw the good results Simon was able to obtain by his method. He attributed great importance to the "*post-ament,*" the support which should be formed for the uterus by the broad upper end of his colporrhaphy, *c b b* in the figure 103. Indeed it was reasonable to hope that if the vaginal portion encountered, high up in the back of the vagina, an impediment to its further descent, the uterus would be compelled to take up a normal position. It is true that this hope was not confirmed, the uterus lay above the cicatrix in retroversion, but a more permanent hindrance to the recurrence of the prolapse was furnished by the colporrhaphia than had been by any earlier operation, and if the retroversion caused any further trouble, which however as a rule, was not the case, the floor of the pelvis, by its increased strength, afforded an excellent foundation for securing the uterus in its normal position by a comparatively small figure of 8 pessary.

Hegar's modifications of Simon's operation, is a decided improvement. The higher up the narrowing of the vaginal canal is carried and the posterior vaginal wall strengthened and

transversely tightened, the more complete and permanent is the prevention of any inversion of the vagina, and therefore of any possible prolapse of the uterus. By Hegar's operation the uterus is compelled to lie with its vaginal portion permanently at about the normal height. The position of the corpus uteri is generally retroversion, yet, in a great number of cases at all events, causes no trouble, a point I shall return to presently.

The principal effects sought and obtained by Bischoff's operation, are the diversion forwards of the lower half of the vaginal canal, the lumen of which is diminished, and the very important increase in the resistance of the pelvic floor.

The comparative advantages of Hegar's and Bischoff's methods of operating for prolapse of the uterus, have been recently discussed* by Dorff and Matzinger. The results of both operations are so decidedly beneficial that, judging from them, it is hardly possible to decide absolutely in favour of either method. In a certain number of those operated on, by one method as by the other, childbed has afterwards occurred without being necessarily complicated by the results of the operation, and generally without the results of the operation being invalidated by the labour. Even if the benefits to be derived from both operations are perfectly equal, an independent reason for preferring the former to the latter may be found in its being shorter, causing less hæmorrhage, and being more likely to succeed in less practised hands. As I have no personal experience of Bischoff's operation, I refrain from giving any decided judgment on this question. In general, plastic operations with the formation of flaps are not the easiest to carry out.

§ 193. I stated at the close of § 190, that two other methods of operating for the retention of prolapse of the uterus would require mention, although the only thing they aimed at was narrowing of the vagina. I believe that both of these operations, only affecting the vagina, are quite as legitimate as the more extended colpo-perineorrhaphy, and colpo-perineoplastik, in spite of the brilliant success obtained by the latter, because they are, while not involving so much, nevertheless in some cases sufficient.

* Articles in the *Wiener Medicinischen Blättern*, 1879 and 1880.

The first is Marion Sims colporrhaphia anterior. The shape of the freshened surface is shown in Fig. 106. The vaginal portion can be seen at the upper part of the figure and the mouth of the urethra at the bottom. The form of the surface freshened is that of the strip *c, a, b, d,* so that a piece of mucous membrane, the shape of a mason's trowel, is left untouched in the middle. The first case in which Sims carried out this method was one in which the prolapse had occurred

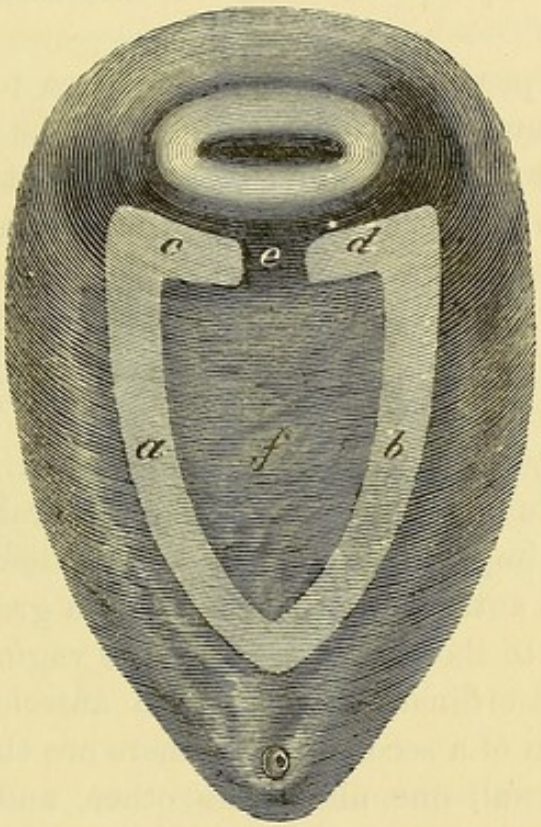


FIG. 106.—Colporrhaphia anterior, after Marion Sims.

after the previous excision of a large oval. He operates *in situ,* after the reposition of the prolapse, the woman being in the left lateral position. After the introduction of a grooved speculum, the vaginal portion is placed far back in the median line, where it is held all through the operation by means of a sound ending in a forked point instead of a knob; this sound is made convex, towards the anterior vaginal wall, and on either side of it, when deeply depressed, the vaginal wall swells up in broad prominent folds. The summit of these folds on each side, is the spot chosen for the sides of the surface to be denuded *a* and *b*. The sound is removed during the preparation of the transverse parts

c and *d*, the ground being kept tense with hooks; it is again introduced for the introduction of the sutures, and not removed till all stitches have been drawn tight and those near the cervix fastened.

The legs of the freshening *a* and *b* must diverge as much as it is possible for them to do and yet admit of their being afterwards united without too great tension. The whole width of the freshened surface *a* is healed on to *b*, and that of *e* to *d*; the gap at *e* is necessary for the escape of the secretion from the surface *f*.

In regard to providing efficient resistance to forcible intra-abdominal pressure, Sims' operation cannot be compared with those described in the paragraph § 192, but contains an element which might be turned to account in completing the results of other operations for prolapse. According to Sims' reports there can be no doubt that a previously existing prolapse of the uterus may be kept permanently in the pelvis by means of his operation, and in my opinion this can only happen because the uterus has by it been placed and retained in anteversion. Not only is the lumen of the vagina considerably diminished, and its inversion impeded by this operation extending as it does high up into the anterior vaginal vault, but a greater increase in solidity is given to the anterior wall of the vagina by it than by the cicatrix of an ordinary colporrhaphia anterior, inasmuch as with the inclusion of a second lumen, there are three thicknesses of the anterior wall one above the other, and I believe that its results not only prevent the vaginal portion from moving downwards, but still more from moving forwards. Sims has not himself stated whether in the cases in which his colporrhaphia prevented the uterus from becoming prolapsed, the organ lay in anteversion or not, and as yet his operation has not been tested in this respect.

If, as seems probable, Sims' colporrhaphia anterior, causes anteversion of the uterus, this operation would be of great use in two distinct classes of cases :—

(i) Colporrhaphia anterior in addition to colpo-perineorrhaphy is often necessary for the cure of prolapse; it was so in 79 of Hegar's 124 cases. If Sims' operation had been performed in such cases, instead of the oval colporrhaphia anterior, it might

possibly have cured, not only the prolapse, but also the retroversion.

(ii) Sims moreover states that he has repeatedly performed his operation with success in old women of 60 and 70, and as its results are quite sufficient to keep up the uterus, whenever there is no great bodily exertion, it seems particularly suited for women in advanced years, the more so that the wound is much less extensive than in colpo-perineorrhaphy or colpo-perineoplastik.

The second prolapse operation to be described is Winckel's, and is carried out on the posterior and lateral surfaces of the lower third of the vagina. The patient being in the lithotomy position, the labia are drawn aside, and the anterior vaginal

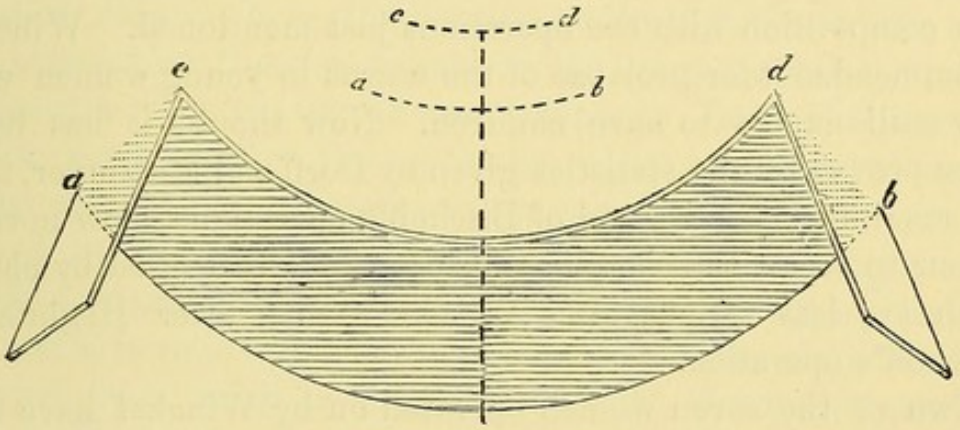


FIG. 107.

wall is held back and the posterior stretched upwards by a long metal catheter as thick as the thumb. The posterior wall of the vagina directly above the remains of the hymen is then drawn up into a fold by hooked forceps, is transfixed in the median line by a pointed scalpel, and the transfixed part 2-2·5 cm. long when flat, is cut through. For 6 cm. on either side of this incision, right and left, long flaps of the mucous membrane are detached 2-2·5 cm. broad, the bases of these flaps lying 3 or 4 cm. away from the urethral orifice on either side. The shape of the freshened surface is shown in the diagram Fig. 107. The base of each flap remaining connected to the vagina, about one half of it is cut off at the median end, and the edges of these cut ends are united by two or three stitches, so that the united flaps make a bridge

over the freshened surface. The right half of the latter is then joined to the left by deep sutures only, beginning from below that is from the middle, and finally the upper and most interior part of the freshened surface is covered by the bridge made of the flaps, in such a way that the sides of the bridge are stitched above and below to the edge of the freshened surface. The dotted line in Fig. 107 is the T-shaped line of union.

In Winckel's prolapse operation we again see the principle of barrier formation, a principle that the success of Simon's Hegar's and Bischoff's methods has thrown into the shade. But the barrier made by Winckel is situated further up than that formed by Fricke's episiorrhaphy, and there is therefore more probability of its permanence, and if I understand it properly, Winckel's operation is not at all intended to be placed in absolute competition with the operations just mentioned. Winckel recommended it for prolapse of the uterus in young women who may still expect to have children. Now though it has been since proved by the statistics given by Dorff and Matzinger, that the results of Hegar's and of Bischoff's operations allow normal labour to occur, the complications that may be caused by childbirth are less serious after Winckel's than after Hegar's or Bischoff's operation.

Two of the seven women operated on by Winckel have had children; the bridge was cut through, and re-united after the labour.

§ 194. The position of the uterus after colpo-perineorrhaphy, or any other successful operation for prolapse, is generally retroversion or retroflexion. A few cases of anteversion are noted down in the lists of the cases operated on by Hegar and Bischoff, and if we knew how, in individual cases, anteversion came to pass after the operation, we might perhaps be able more often to bring about the conditions necessary to induce it; but in these individual instances, it is extremely probable that an extension of the processes of inflammation and cicatrization after the operation to the connective tissue of the parametrium, especially to that of the folds of Douglas—an accident we endeavour as far as possible to prevent—has led to the contraction of attachments that were quite relaxed when the uterus was prolapsed.

The retroversion or retroflexion of a uterus that has been prolapsed, does not cause by any means the same trouble and disturbance in the general health, as that of one that has till then been in the normal position. It is very natural that women, who have for years had to endure the suffering caused by a prolapse, or the plagues of obnoxious pessaries, should think little, when relieved of them, of the much slighter troubles which they have taken in exchange; but the troubles arising from a retroflexion of the uterus are in reality far less, if the uterus has been previously prolapsed. These troubles are due in the first place, to the interference with the circulation caused by the torsion of the ligamenta lata, and in the next, to the traction of the peritoneum and the irritation that arises from the constant contact of the peritoneal surfaces abnormally pressing on each other. Now the traction on the ligamenta lata, and the obstruction thereby caused to the uterine circulation, was far greater when the uterus was prolapsed. Even if the retroflexion remains after the reposition of the prolapse, the stasis in the uterus is immediately and permanently diminished, as is proved by the rapid involution of its abnormal length and the disappearance of any existing ectropion. Moreover, directly the uterus is returned into the pelvis, the peritoneum is at once relieved from much traction and friction. In consequence of the notable deepening of Douglas' pouch that necessarily occurs in such cases, a uterus that has been previously prolapsed has, even when lying low down in retroflexion, a comparatively comfortable position and even if, when the abdominal pressure is increased, it is driven down lower than would have been at all possible without the previous existence of the prolapse, does not necessarily cause any traction of the peritoneum whatever.

Nevertheless, the retroversion that remains after the permanent reposition of a prolapse, often causes quite enough trouble. The position of the ovaries can hardly be any better in retroversion and retroflexion than in prolapse and, as we pointed out in the previous chapter, it is to the unfavourable position of the ovaries that very many of the symptoms accompanying retroflexion must be referred. Moreover, the tendency to the recurrence of the prolapse depends on the presence of retroversion.

The more nearly the axis of the uterus coincides with that of the vagina, the more is the efficiency of the obstacles put in the way of prolapse by operation endangered.

As, up to the present time, we have no way of restoring the anteversion of the prolapsed uterus by operation, where such troubles or dangers exist there is, even after the successful performance of a prolapse operation, a decided indication for us to take steps to restore the normal anteversion. A figure of 8, or sledge-shaped pessary, will find in the pelvic floor, increased in strength by the operation, an excellent support, and will secure the uterus in normal anteflexion.

As I cannot as yet look upon any of the prolapse operations as radical, I do not think it any imputation against them to order a patient to wear a pessary after colporrhaphy. I have in many cases, in some of which there was no prolapse at all, performed colpo-perineorrhaphy, simply with the intention of giving to the pelvic floor the solidity necessary to support the figure of 8 or sledge-shaped pessary, which was the only appropriate means of curing an existing retroflexion and its evil consequences.

§ 195. The pessaries designed for the support of the prolapsed uterus, are of two kinds, different in principle. Some aim only at preventing the prolapse of the uterus and vagina; the others keep the organ in its proper position.

The pessaries of the former class are unnumbered in their variety. The student will find an instructive collection of the principal types, in five plates in the work by O. von Franque which appeared in 1860. The new instruments invented in the last twenty years would occupy as much more room. Every year fresh ones are invented and made in large quantities, and the fact that their manufacture pays, is a proof of the vast consumption there is for them.

The evil consequences brought about by pessaries improperly used or neglected, such as vaginitis, extensive sloughing of the vagina, and perforations of the rectum bladder or peritoneum, should not be attributed to the pessary itself; by improper use or neglect, the most excellent means may become injurious.

In considering these evils, it must be remembered that the

sufferings of very many women are greatly relieved by the use of these pessaries, whatever shape they may have, or whatever material they be made of, and that it is a great advantage in the eyes of most patients that they can obtain this relief without consulting a physician about a genital disorder, the principal practice in the introduction of uterine supports having been, from time immemorial, in the hands of male and female quacks. Even up till recently, no physician consulted for a prolapsus uteri, could do more than afford an uncertain relief by choosing out of one and the same series of very unsuitable instruments, the one that seemed the least unsuitable of the lot; for the operations for prolapse that have since been so successful are acquisitions of recent date and while the normal position of the uterus is only now becoming generally known, a ready skill in restoring this position where it has been lost, is still very far from common.

Stemmed pessaries, secured by the stem to a T bandage or pelvic belt, cause great inconvenience, and in addition have the serious disadvantage that external shocks, which cannot be altogether avoided, are communicated directly to the uterus.

Sessile pessaries those most generally used, retain their position by the tension of the vaginal wall, and by constantly enlarging and relaxing the vagina increase the fundamental causes of the displacement, while diminishing its troublesome effects; they are therefore, in the worst sense of the word, palliatives. Moreover, the uterus, together with the ovaries, lies in retroversion or retroflexion above or behind the pessary whether the latter be stemmed or not.

It is evident therefore, that all the pessaries of that class, whose only aim is to prevent the uterus and vagina from becoming prolapsed, are unsuitable palliative appliances. Nevertheless, the physician cannot always avoid employing them. Women, who decline operative treatment, or in whom from any other reason, an operation is contra-indicated, and women who are not able to remain long enough under observation to be fitted with a pessary that will permanently retain the uterus in the normal position, cannot be allowed to go away with their prolapse coming down.

The best means of retaining the uterus in such cases, is a

plug of wadding, jute, or bath sponge. The patient can remove the plug herself at night, replacing it by a fresh one in the morning, and securing it if necessary by a simple T bandage. A sponge washed with a disinfecting solution at night may be used for several weeks. The wadding or sponge may also be utilized for the application of local treatment.

But for many sufferers, especially those of the labouring classes, this treatment takes too much time, trouble and expense. For such patients, the most suitable—the only admissible treatment—is Meyer's elastic ring made of black india-rubber. This must be chosen of a size just large enough to keep up the prolapse; it has the disadvantage of distending the vagina, but none of the other disadvantages and dangers of other pessaries of this class. Breisky gives the correct directions for applying it in the proper manner. The woman being on her knees and elbows, the ring is inserted after the vagina has been extended and filled with air by the introduction of a grooved speculum, the uterus and ovaries being thereby in as elevated a position as possible. It is well to heat the ring previously to the temperature of the body that it may at once accommodate itself, with the portio vaginalis in the opening, as closely as possible to the vaginal vault. If introduced in this way, the ring will indeed often secure the uterus in the normal position of anteversion.

It must, when possible, be ascertained by examination the day afterwards, whether the instrument has kept its position during the filling and emptying of the bladder and rectum, and in spite of the various changes in the posture of the body.

The questions, how often vaginal irrigation should be performed, and how soon the ring should be replaced by a new one, depend on the condition of the discharges. After menstruation, thorough purification of the vagina is always necessary. The patient may remove the ring herself for this purpose, and afterwards introduce the same, or a fresh one. It is of course better for her to put herself under the care of her physician at the end of every month.

§ 196. In regard to the second class of pessaries, those which are intended to keep the uterus in its normal position, and which must therefore also allow it to make its normal move-

ments, the case is totally different. Their object makes it necessary for them to be adapted for longer retention for as the patient cannot replace her own uterus in the normal position, she must not attempt to remove and replace the pessary.

The pessaries which keep the uterus in the normal position are formed out of rings of copper wire covered with rubber bent into the shape of a figure of 8, or of a sledge. The figure of 8 pessary, that it may itself give sufficient support to the uterus, requires a certain solidity in the floor of the pelvis to rest on. There is no such solidity in the pelvic floor in most cases of prolapsus uteri. It is therefore generally by some modification of the sledge-shaped pessary, that we succeed in securing a uterus that has been prolapsed in the normal position, without previously increasing the solidity of the pelvic floor by operation.

It is often remarkable how small a properly shaped sledge pessary need be, in order to retain an immense prolapse of the uterus with complete inversion of the vagina. The pessary, of which the first requisite is that it should keep the uterus in anteversion and anteflexion, causes then no immoderate tension of the vaginal wall. The vagina does not become wider or more relaxed because it is worn, on the contrary, I have often, when I have seen a patient again after some months, been able to select a smaller instrument, which has proved as effectual as the larger one was at first, the tension and elasticity of the vagina having increased in the interval.

Indeed, in cases of prolapse in young people that are not of extremely long-standing, one should by no means give up all hope of restoring the lost solidity of the normal supports of the uterus. If all causes of injury be removed, and a local tonic treatment adopted for some time while the uterus is kept in its normal position by a suitable pessary, the genital organs may be again restored to their normal state. The most favourable conditions for such treatment are offered during and immediately after a puerperal state.

I give a sketch of a form of sledge-shaped pessary that has proved particularly useful for prolapse. The various shapes of these instruments, which are suitable for prolapse are not

materially different from those which support the uterus when simply retroflected, but the relaxation of the vagina, and the pathological peculiarities of a case, often give great trouble before the proper shape can be found.

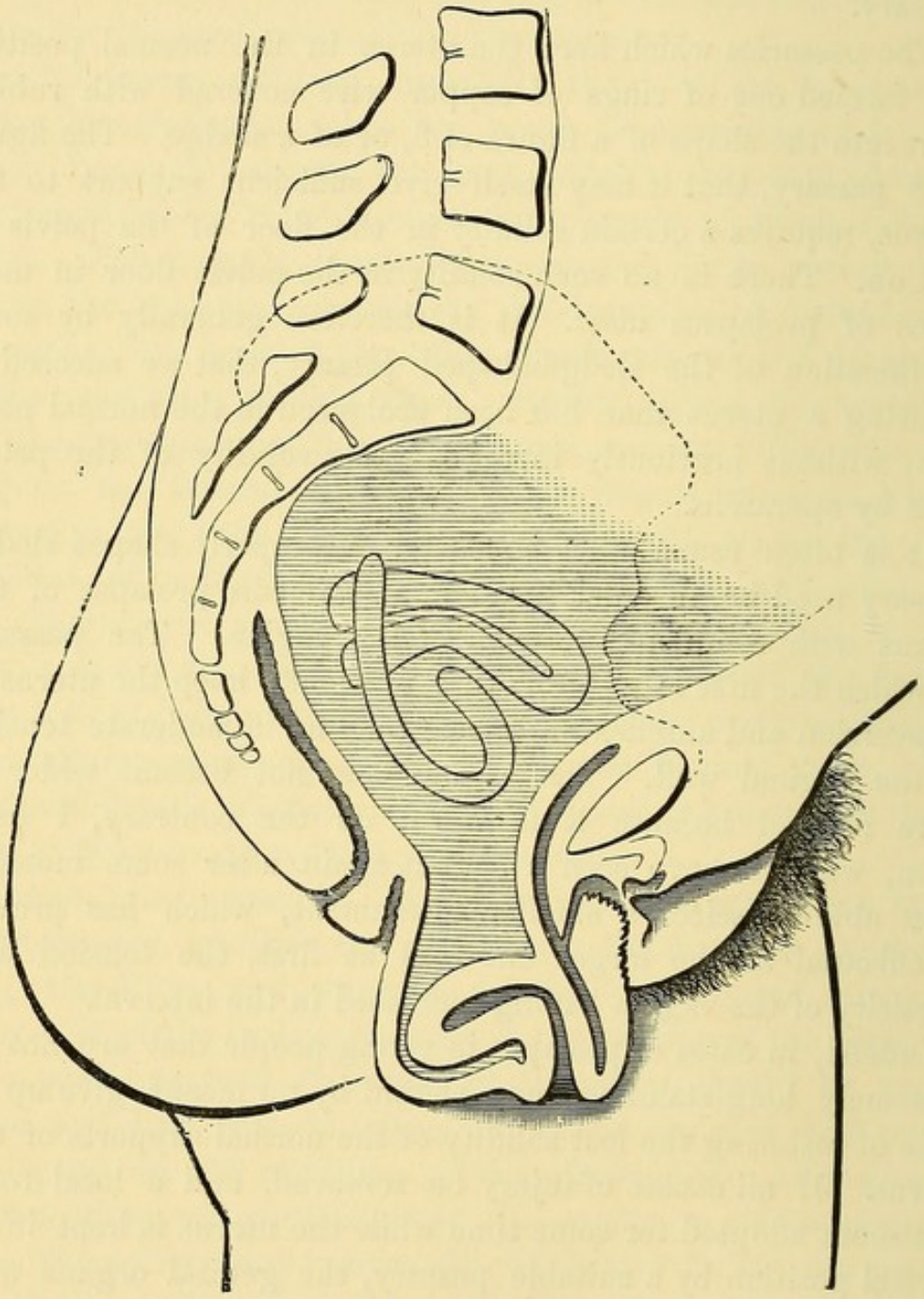


FIG. 108.—Complete prolapse of the retroflected uterus; retention in the normal position by a sledge-shaped pessary.

Mrs. L. from U., always a healthy woman, who menstruated in her twentieth year, had children in her twenty-third, twenty-eighth, and thirty-fifth years, and passed well through all her confinements, but since the last, the troubles of descent and

prolapse have been gradually developing themselves. The result of an examination on February 25th, 1872, is represented in Fig. 108. The prolapse was complete; the uterus was retroflected but not greatly enlarged, a 4 mm. sound passed to 7·5 cm.; the vagina, with the exception of a short strip of the posterior wall, was completely inverted. The uterus is drawn a second time, somewhat higher up in the pelvis than normal, in the position in which it was afterwards replaced, and below it is shown the sledge-shaped pessary by which it was kept in the normal position.

Mrs. R. from R., 29 years old; one normal labour and childbed six years ago, soon after which she began to suffer from pelvic troubles whenever she worked hard. She noticed a prolapse only fourteen days before she applied at the clinic, on June 12th, 1875; the uterus, much enlarged, was then found completely prolapsed and in retroversion. Reposition, and sledge-shaped pessary like that in Fig. 109. Retention of the uterus in a nearly normal position without any discomfort.

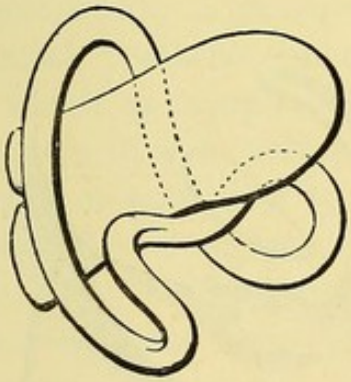


Fig. 109.

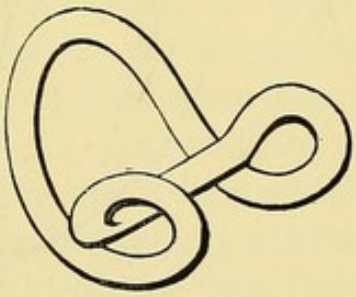


Fig. 110.

Fig. 110 represents a sledge-shaped pessary of a similar shape which has repeatedly proved effectual for large prolapse.

When it is more particularly the inversion of the wide and relaxed vagina which always recurs, even with the pessary in position, and if the uterus, when replaced, either has very little tendency to fall into retroversion, or is already in complete senile involution so that the sort of position it occupies in the pelvis is of little moment, one need not attempt to fix the vaginal portion in the back of the pelvis by a return curve in the anterior loop of the pessary, but may utilize this part of the

ring to keep the vagina above the vulva, and to obtain a wider support on the walls of the pelvis.

Fig. 111 shows a pessary by which a very voluminous prolapse of the completely inverted vagina was retained and all the troubles it occasioned cured.

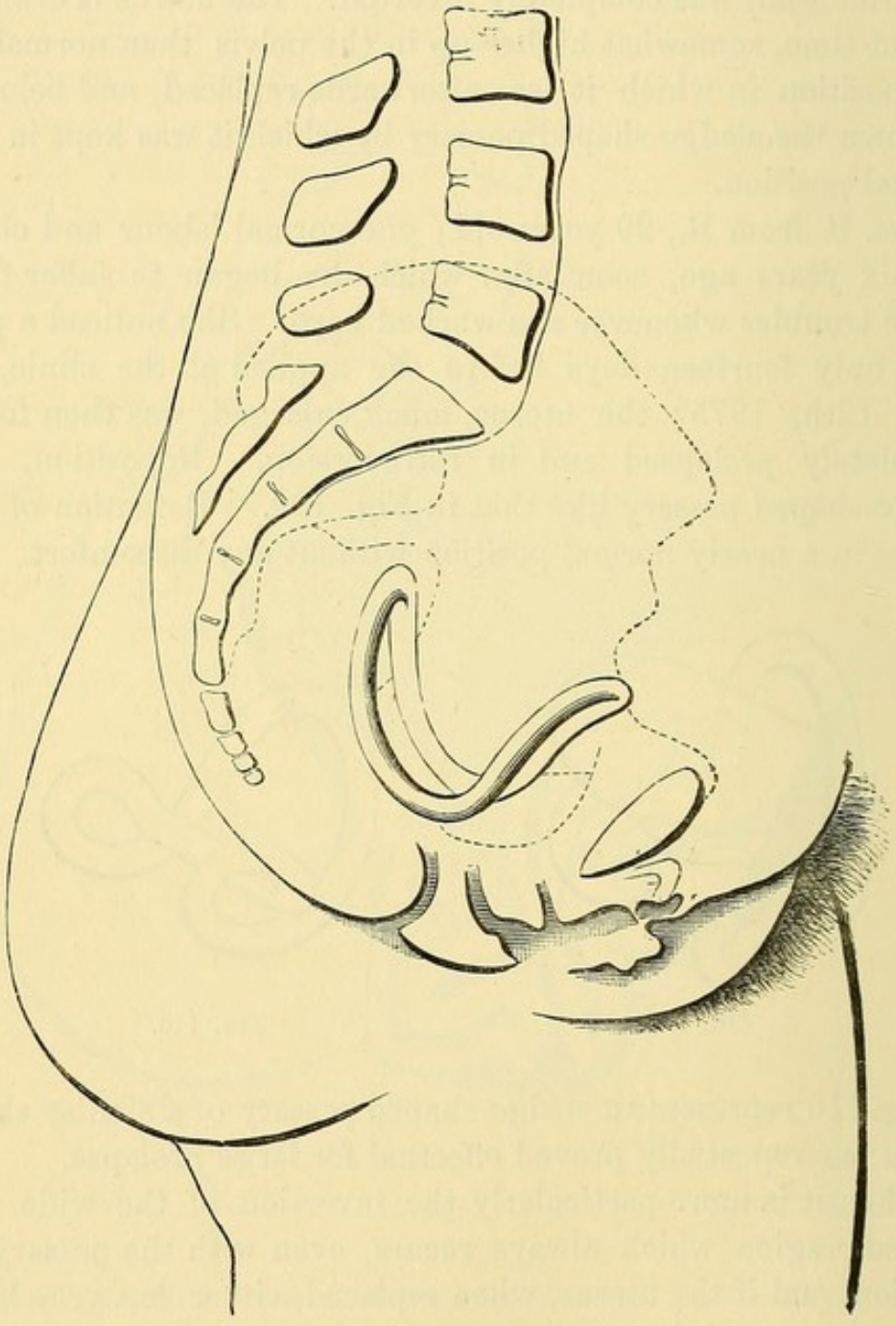


Fig. 111.

Mrs. H. from E., 65 years old, the mother of several children, had always enjoyed good health till one year ago; she then found that she had a prolapse of the uterus, which in a short time increased so as to lead to complete inversion of the vagina, and now

gives her great trouble when she is at work. The uterus, decreased in size by senile involution, lies within the inverted vagina. A small sledge-shaped pessary having proved inefficient, the one shown in Fig. 111 was introduced on May 8th, 1872, and retained the uterus properly without causing any trouble.

§ 197. The following is a short summary of the various indications for treatment by pessaries or operation given by different forms of descent and prolapse of the uterus. 1. Descent and prolapse of recent occurrence should, provided that the perineum be not atrophied, and has not been injured in labour, be treated with such pessaries as secure the uterus in the normal position, *i.e.* sledge-shaped pessaries made of wire covered with india-rubber, or of aluminium.

Treatment must also be prescribed to strengthen the contractile elements of the pelvic floor, and the patient should be made aware that if she become pregnant, the affection may be cured in the ensuing childbed.

2. In prolapse of very long standing (secondary atrophy of the perineum); in prolapse that has already been treated with inefficient pessaries (incurable relaxation of the vagina); in that which is complicated by lacerations of the perineum or vulva, as well as in prolapse of the first kind when the patient is unable or unwilling to return for the control of the pessary, one should operate without attempting any treatment with pessaries—that is to say, one should tell the patient without hesitation that the only proper treatment for her case is an operation.

The operation to be preferred is Hegar's colporrhaphia posterior—followed if necessary, by colporrhaphia anterior.

I may repeat that personally I should feel inclined, in operating for the above reasons, to perform Winckel's operation in young women who may still expect to have children, and Sim's colporrhaphia anterior in old women who have not to do any hard work, provided the perineum was intact.

3. If though the operation is indicated, the patient declines to submit to it, it is better for the physician to select and introduce an elastic gum ring, according to the directions given, than for him, directly or indirectly, to hand the woman over to

male or female quacks. Of course, in most cases, the elastic gum ring will widen the vagina. The fact that after having had great practice in fitting such instruments, one may succeed even in cases in which an operation is indicated (2), in giving such a shape to one of these rings that it will retain the prolapse without causing any pain or inflammation from pressure, does not at all alter the indications there laid down.

4. If an operation is contra-indicated by advanced age or infirmity, or from any cause whatever cannot be done at the time, and local medicinal applications have to be made to the inverted vagina, tampons of wadding changed every day are the best means of retaining the prolapse.

§ 198. *Peritoneal fixation* has twice been suggested as a means of preventing the recurrence of prolapse of the uterus.

Seyfert's idea of allowing the reposed uterus to become adherent in retroflexion is to be looked upon rather as a curiosity. The transformation of prolapse into retroflexion may be seen any day a prolapse of the uterus is replaced by an unskilled hand, and a bad sort of pessary introduced. The fundus of a uterus so replaced may become adherent in Douglas' pouch, which in a case of long standing prolapse extends, even after reposition, almost down to the perineum—but no impediment whatever is thereby formed to the immediate, if only partial recurrence of the prolapse, as soon as the pessary is removed.

P. Müller, however, has proposed the performance of laparotomy in cases of obstinately recurring prolapse, the uterus being elevated by the sound, supra-vaginal amputation carried out, and the stump healed into the abdominal wound, and has himself done this repeatedly with success. Should there be any other indication for laparotomy and supra-vaginal amputation of the uterus, it is a good plan to prevent a recurrence of the inversion of the vagina by healing the stump of the uterus to the abdominal wound, but prolapse of the uterus in itself can never, in my opinion, be an indication for laparotomy; Müller's operation cannot be performed unless the uterus is reponible, and if it is, there are less dangerous methods of making the reposition permanent.

§ 199. Finally, when reposition is out of the question prolapse of the uterus sometimes causes such troubles, and even

sometimes such extreme dangers, that it being impossible to encounter them successfully in any other way, *extirpation of the prolapsed uterus* seems the proper thing to be done.

Prolapse of the inverted uterus will be discussed in Chapter XI. The extirpation of the prolapsed but not inverted uterus has been carried out quite lately four times, by Edwards, Choppin, Langenbeck and Kehrer.* The result was successful in the first three cases, fatal in the fourth.

Since the operation is only indicated by the presence of some special complication, the mode of procedure must vary according to the peculiarities of each individual case. It is in all cases important, though sometimes extremely difficult, to detach the bladder from the uterus and to avoid injuring the ureters.

The uterine vessels in the broad ligaments are ligatured either in a mass with the peritoneum, or singly, or in groups. The methods pursued by Billroth,† and Schroeder,‡ in the vaginal extirpation of the carcinomatous uterus may be taken as ruling the extirpation of the prolapsed uterus. The question whether in amputating the uterus the ovaries should be left behind will depend on the age of the woman; in those who are still menstruating, it is not right to do so.

SUMMARY.

Descent and Prolapse of the Uterus. As a rule descent is, merely the description of the condition found in the vagina in cases of moderate retroversion and retroflexion; a position of the vaginal portion, lower, or rather more anterior than is usual. The position of the uterus is called prolapse, as soon as the vaginal portion emerges from the vulva.

Except in the rare cases of hypertrophy of the vaginal, intermediate, or

* Kehrer. *Op. cit.*

† Dr. J. Mikuliez. Ueber die Total-extirpation des uterus. *Wiener med. Wochenschrift*, 1880, 1881.

‡ Karl Schroeder. Ueber die theilweise und vollständige Ausschneidung der carcinomatösen Gebärmutter *Ztschr. f. Geburtsh. v. Gyn.*, 1881, Bd. VI. S. 213.

supravaginal portion of the cervix, prolapse is due to dislocation of the whole uterus. The prime cause of its origin is increased intra-abdominal pressure with relaxation of the uterine attachments; an actual predisposition is given by the puerperal state. Retroversion with descent is the preliminary stage of prolapse, and the question whether the stabile condition developed out of this preliminary stage is retroflexion or prolapse, depends on the habits of life of the woman.

Patency of the vulva, to whatever cause it may be due, is an important condition in the etiology of prolapse, as the action of intra-abdominal pressure is thereby made one-sided. The elongation of the uterus, of the cervix particularly, generally existing in prolapse, is the effect and not the cause of the displacement, and decreases spontaneously after reposition.

Descent and recent prolapse are to be treated with such pessaries as give the uterus the position of normal anteflexion, *i.e.* figure of 8 pessaries, or sledge-shaped rubber-covered wire rings.

In prolapse with laceration of the perineum, and in old cases of prolapse with atrophy of the perineum, one should operate before attempting to use pessaries. Hegar's colporrhaphia posterior is the best operation. If one has to be contented with palliative support, tampons changed every day, or soft rubber rings, are to be preferred.

CHAPTER X.

HERNIA OF THE UTERUS. HYSTEROCELE.

§ 200. The uterus, or more often the corpus uteri, may in exceptional cases form part of the contents of the sac of a hernia. In most of the cases recorded in the old literature the condition was only observed after the commencement of pregnancy; some given by Von Ruysch for example, were cases of the so-called ventral hernia, *i.e.*, acutely developed pendulous abdomen, and were entirely due to the pregnancy. Some of the others were probably cases not of hysterocele, but of extra-uterine fœtation in the sac of a hernia.

The majority of cases recorded relate to inguinal hernia. Hysterocele has, however, been also observed as hernia cruralis.

Two other cases (an old one of Papen's and another of Chopart's, both of which Meissner appears to have taken out of Richter's *Rudiments of Surgery*) cited as ischiatic hernia were not hysterocele at all, it is stated in the description that the uterus lay, not in, but at the mouth of an enormous hernial sac which contained most of the intestines.

The case of hernia foraminis ovalis related by Klob is very similar. Kiwisch, who is given as the authority, expressly states that in the pathological preparation he had seen, the right ovary and tube passed through the aperture for the vessels in the right foramen ovale, and had dragged the uterus *nearly up to the mouth of the sac.*

§ 201. Hysterocele may no doubt arise in various ways. In femoral hernia, when the omentum or intestine is found in the sac adhering to the uterus, it is very natural to suppose that this adhesion had existed for some time, and that the other viscera in passing into the hernia had dragged the uterus after them. A much more plausible explanation which I find in Klob, and which is also valid for cases where no such adhesion exists, is, that the gradual enlargement of the hernial sac is carried out at the cost of the duplicature of peritoneum forming

the ligamentum latum, and that the uterus is thereby dragged up towards, into, and finally through the mouth of the sac, The more uncommon cases of femoral hernia must arise in one of these ways, and the same mode of origin may therefore be accepted as possible for inguinal hernia. But the mode of origin of inguinal hernia of the uterus is in the majority of cases, evidently quite different, and depends on the development in the fœtal state.

Among the rare cases of hysterocele inguinalis the proportion in which the uterus is bicorned or bipartite is remarkably large, deformities in the development of the internal genital organs with which other approximations to the male type are often associated. If the ovary descends on the round ligament, in the same way the testicle does upon the analogous gubernaculum hunteri, and develops for itself a processus vaginalis peritonei in the inguinal canal, similar to, but perhaps somewhat shorter than that in the male fœtus, then even though the ovum does not, like the testicle, pass down right through the inguinal canal, a disposition for it to do so exists, and if an inguinal hernia be afterwards developed the ovary passes down into it, and the uterus or the corresponding horn of the uterus follows, the round ligament itself perhaps being also shortened after the male type. The question whether a congenital predisposition must have existed in cases in which there has been no previous hernia and the genital functions are perfectly normal, and in which, after pregnancies have previously run a normal course, the hernia occurs suddenly and contains no viscera but the ovary and afterwards the uterus, as in the two cases quoted by Ashwell, is one that cannot be decided at present.

§ 202. The *diagnosis* can offer no difficulty if the genitals are normally developed in other respects. If the uterus is bicorned as in Olshausen's case, or is rudimentary with an imperforate vagina as in Leopold's, it is not so easy. Unless the panniculus adiposus be extremely thick, one can, simply by an external examination, recognise the normally shaped and possibly enlarged uterus forming part of the contents of the hernia; in any case careful and complete bimanual examination of the pelvis, if necessary from the rectum under chloroform, will secure an accurate diagnosis.

§ 203. The rules for *treatment* are as follows:—Simple taxis is of course the best treatment, if the uterus can be reduced in this way, and if the taxis does succeed special care must be taken for the retention of the uterus, as when lying in the hernial sac it readily becomes irreducible from swelling. Most of the reported cases of hernia of the uterus were irreducible as was one of Ashwell's, and also the case given by Olshausen. Reposition is, provided the uterus is sound in other respects, absolutely indicated, and should not, in my opinion, be delayed till symptoms of incarceration have come on. In irreducible hernia uteri, unless the woman is suffering no inconvenience whatever, and is not exposed to the danger of conception, the radical operation for hernia with reposition of the uterus, as carried out by Madurowicz in Bylicki's case, is to be recommended. Should the uterus and vagina be rudimentary, as in Leopold's case, and the removal of the ovary lying in the hernia be therefore unconditionally indicated, it is certainly right to take away the rudimentary uterus also.

If the uterus is gravid when the hernia comes under observation, considering the great danger which is associated with the completion of the pregnancy in the hernial sac, the induction of abortion, in the way practised by Scanzoni, is indicated.

But if the pregnancy is at, or near its termination, and the mouth of the sac not so enormously wide as to make delivery in the normal way seem possible, hysterectomy is indicated and is best done in Porro's way, by amputating the uterus and healing the stump into the mouth of the sac; the hernial sac and a good deal of superfluous integument must be taken away in order to close the wound.

SUMMARY.

Hysterocele.—Hernia uteri is generally inguinal, rarely crural; herniæ of the uterus through the ischiata or oval foramina, though often cited, have never been seen.

The radical operation for hernia is indicated; in hernia of the gravid uterus, artificial abortion, or Porro's operation.

CHAPTER XI.

INVERSION OF THE UTERUS.

§ 204. *Definition and Anatomy. Inversio uteri.* When the form of the wall of the uterus is altered in such a way that the inner surface of the organ is turned outwards, and the outer inwards, the uterus is said to be inverted. The extent to which the uterine wall may be affected in this way is not always the same, and inversions of the uterus have therefore been divided into different degrees.

Stabile partial inversion of the uterus, limited to a small segment of the wall, in most cases affects the cervix, and will be afterwards discussed by itself. Inversions proper are naturally divided into three degrees.

In the first of these, the inverted fundus lies above, or at all events not below the level of the external os, and this form of inversion, known in its earlier stages of development as depression, in its later as introversion,* is the least uncommon. It is, however, hardly ever permanent, as the inversion very soon either goes back, or becomes complete.

In the second degree, the fundus has passed lower down, and more or less of the inverted uterus lies outside the external os.† The cervix uteri, or part of it, still preserves its original direction, and the base of the projecting tumour formed by the inverted uterus is surrounded by the cervical canal, or at least by the os uteri. Chronic inversion that has become stabile is most commonly in this condition.

The third degree is the complete inversion of the whole uterus, including the cervix. In it the seam formed by the vaginal portion at the junction of the vagina and the cervix uteri has totally disappeared, or is directed with its free margin upwards. This complete inversion as a condition of

* Crosse. "Essay, Literary and Practical on Inversio Uteri," *Trans. Prov. Med. and Surg. Association, London.*

† *Perversion.* v. Crosse. *Loc. cit.*

chronic development seems to be very rare indeed, for its existence, at least without co-existing prolapse, is denied by some authors.

§ 205. These three degrees of inversion constitute successive stages in the existence of most of these displacements, and in acute cases develop one out of the other very rapidly, in chronic cases at a slower rate.

The inversion of the uterus generally commences at the fundus, though some lateral part of the uterine wall may occasionally be the first part to tilt itself inwards. There is as yet no proof that spasmodic inversion of the organ ever commences at the os and extends to the whole corpus uteri.

An opportunity of observing these three degrees as successive stages in the same case of inversion rarely occurs. Indeed any such observation could hardly be a proper one, for even if the opportunity offered itself, it would be our duty to interpose to prevent the progressive development of the displacement.

I have, however, quite lately seen them succeed each other in the reverse order, during the spontaneous reduction of a completely inverted uterus, and as the manner in which they presented themselves was very instructive, I give illustrations of the successive phases of the case as laid down in my diagrams of the pelvis directly after each observation. Figure 114 represents the first degree; Figure 113 the second; and Figure 112 the complete inversion.

Mrs. L., from H., 50 years old, menstruated at seventeen, has had nine children, twins twice, her last confinement was ten years ago. She was healthy, and menstruated regularly till Christmas, 1876, when her catamenia became very profuse and protracted, and the intervals short and irregular. About Christmas, 1877, severe pains just like those of labour came on and continued for several days. Since then there has been no hæmorrhage, but she has suffered from sacral pains, frequent desire to make water, troublesome defœcation with the passage of flattened fœcal masses after great straining, and has been constantly losing flesh.

She was admitted into the Clinic on May 24th, 1878. The result of the examination then made is represented in Fig. 112; the vagina was filled up by a knotty tumour with a smooth

surface; the vaginal vault, which could just be felt all round the tumour, was quite blind; a small ridge formed by the edge of the os uteri could be distinctly felt at the base of the tumour in front, and also for a short distance behind; laterally, this

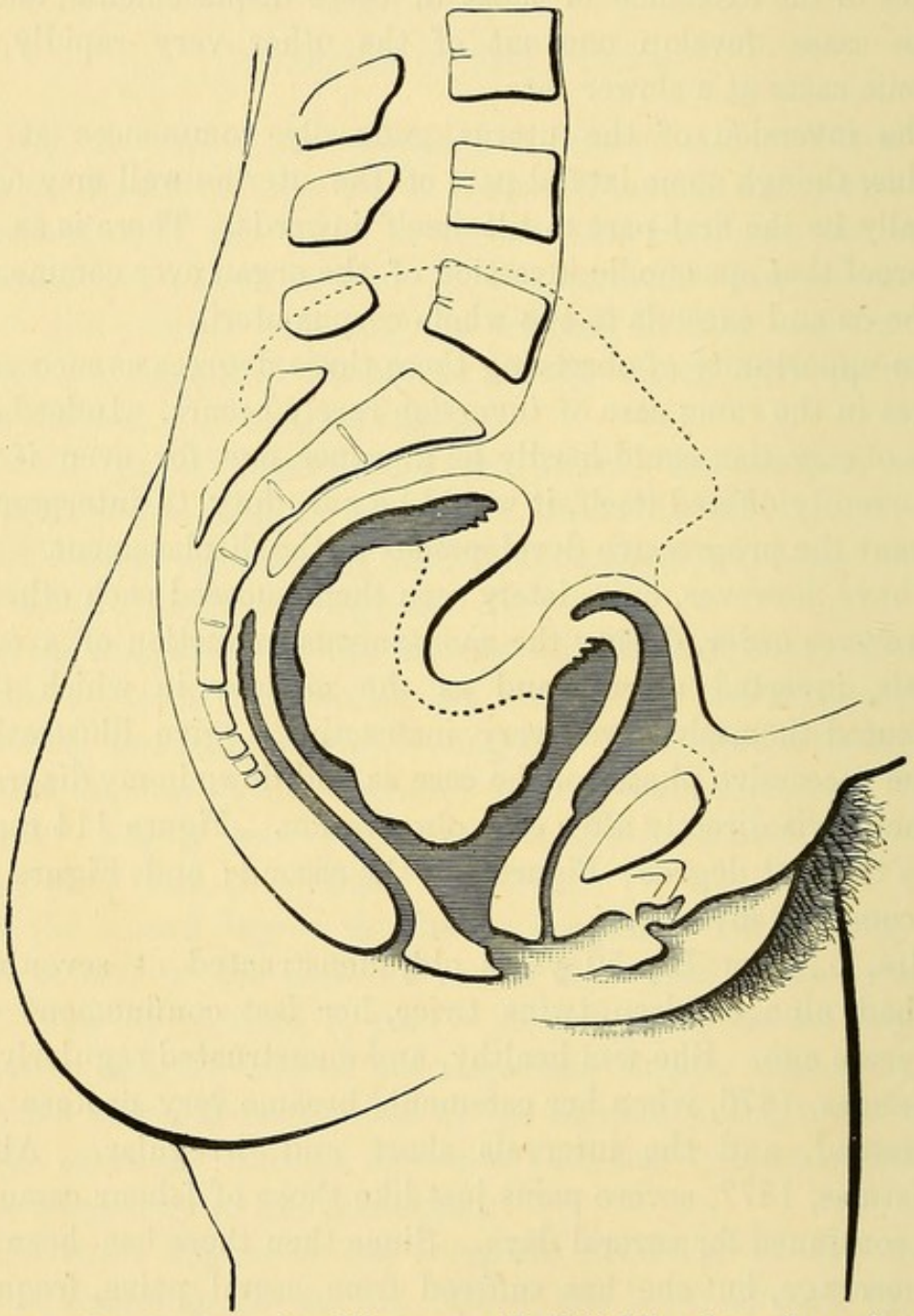


FIG. 112.—Complete inversion of the uterus; the dotted line shows the surface from which the tumour was separated.

ridge had been completely spread out. The finger introduced into the anterior or posterior vaginal vault, could be distinctly felt from the hypogastrium, and no uterus projected into the abdomen. The tumour could be easily depressed far enough

for two fingers in the rectum to make out the entrance of the funnel of the inversion, and a properly curved uterine sound passed into the bladder, could be felt at the mouth of this funnel by the finger in the rectum. The diagnosis made was "total inversion of the uterus, including the cervix, the

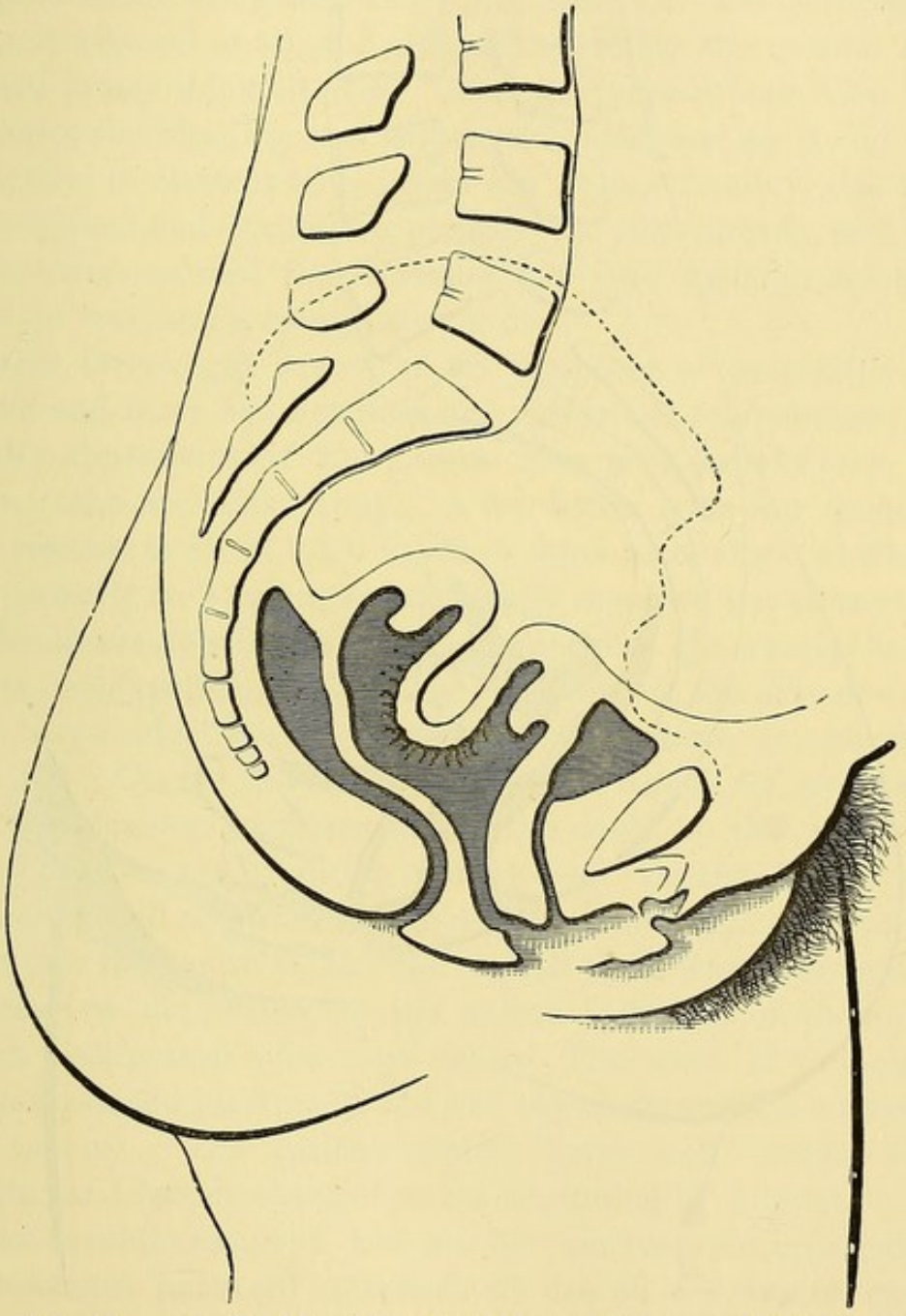


FIG. 113.—Spontaneous re-inversion of the uterus after removal of the tumour.

mucous surface of the corpus uteri occupied by tumours, appearing to be myomata." According to the anamnesis, the inversion had taken place at Christmas time in the previous year, in consequence of the tumour occupying the fundus uteri.

"Indication—removal of the tumours; if in the operation the peritoneum should be exposed or be injured—removal of the uterus." The operation was performed on June 18th, 1878, that part of the mass facing most directly downwards was

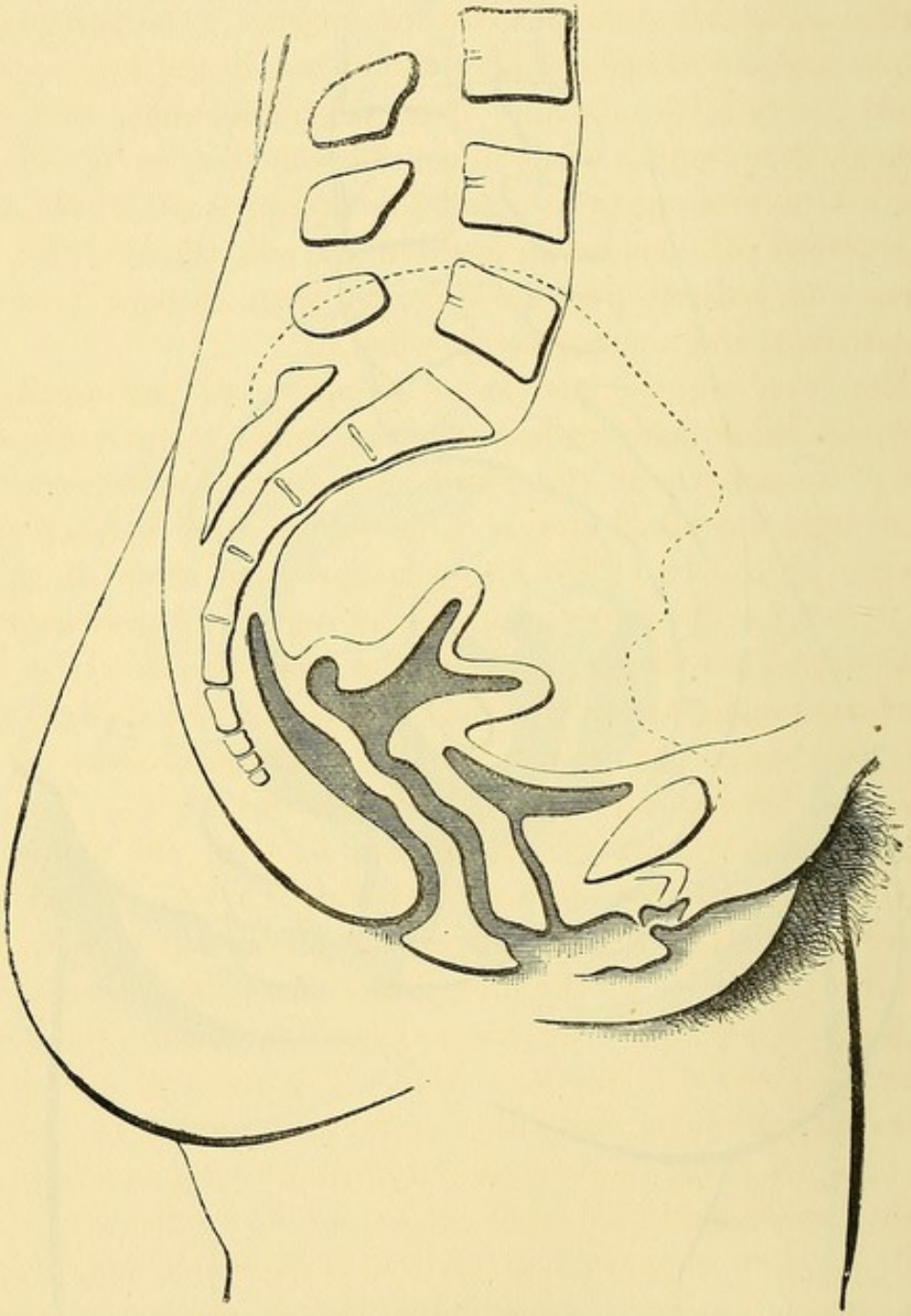


FIG. 114.—Spontaneous reinversion continued.

seized by hooked forceps and without any trouble drawn right into and through the vulva, the superior limit of the tumours next the os uteri was then ascertained, and from it the tumours, some singly and some in groups, were shelled out of their

couch of connective tissue, partly with a sharp curette, and partly with the finger. As there was considerable hæmorrhage, an india-rubber tube was passed around the cervix. The separation of the tumours from the uterus took place along the dotted line shown in Fig. 112. The tumours removed weighed about 340 grammes (·73 lbs. nearly). The peritoneum was not exposed at all, and after the operation the uterine wall seemed pretty thick all over. After the india-rubber tube was loosened, the bleeding was still considerable, and as it did not seem wise to attempt to re-invert the uterus forcibly, the tube was replaced and secured in position by silk threads, and the patient was ordered free washing out with carbolic solution, absolute rest, and a strengthening diet.

After forty-eight hours, as no symptom of peritonitis appeared and there had not been any rise in her temperature, and as the appearance of the uterus was quite satisfactory, the rubber tube was taken away. A few hours later her temperature rose up to 39·2 (102·6 F.) for a short time, after which she felt perfectly well again, and gradually regained her strength.

The uterus now began, commencing from the cervix, to re-invert itself spontaneously. The condition on the 29th of June, nine days after the removal of the ligature, is shown in Fig. 113. On the 3rd of July the uterus was so far re-inverted that its deepest part was about the level of the inner os; Fig. 114 gives the condition on that day. On the 7th of July the cervix still admitted the finger, the fundus still projected a little into the cavity of the uterus, and there was a corresponding shallow depression on the external surface of the organ which disappeared a few days later. The walls of the uterus when examined bimanually did not anywhere exhibit a trace of the tumour. The patient rapidly grew well, increased in weight, and was discharged at the beginning of August.

The tumours removed had all the macroscopic appearances of myomata, but were unfortunately lost on the way to microscopical examination.

In June 1879 Mrs. L. returned on account of pain and hæmorrhage, and stated that she had been feeling quite well up to three weeks previously. The uterus formed a tumour reaching as high as the navel, there were smaller tumours aris-

ing from the posterior abdominal wall on the right side, and a little ascites. The cervix was broad, infiltrated and gaping, admitting the finger for four to five centimetres. The uterus was almost immovable, closely fixed to the posterior wall of the pelvis on the right side. As there was no indication for operative treatment, the patient preferred to return to her family; she died in the course of the same year, but there was no post-mortem examination.

§ 206. *Prolapse of the inverted uterus.* The inversion of the vagina is a comparatively common complication of inversion of the uterus; but it is not correct to describe this complication as the third or fourth degree of inversion of the uterus. Inversion of the vagina may accompany any one of the degrees of inversion of the uterus already described, and may be entirely absent in the highest degree, when the uterus is turned completely inside out—as is shown by the case represented in fig. 112. Indeed the uterus, while remaining in the same degree of inversion, may alternately be prolapsed and lie in the vagina.

The above statement refers only to inversion of the uterus of chronic origin, with which alone we have here to do. In regard to the acute occurrence of inversion of the uterus, during and after labour, the prolapse of the inverted organ may properly be considered as the last act in the inversion of the genital canal.

§ 207. *Anatomy.* The inversion of the uterus generally forms a voluminous soft and elastic tumour which, invested with mucous membrane, fills up about two-thirds of the upper part of the vagina, or when the latter is also inverted, lies in front of the external genitals. The form of the tumour is generally almost symmetrical, and approximately pear-shaped, but may vary in many ways, especially in consequence of tumours situated in the uterine wall. There is always a pedicle, diminishing in size upwards, on the circumference of which but not always extending all round it, is to be found a projecting ridge, the border of the os uteri, with a more or less deeply depressed fold. The depth of this circular fold corresponding to the os uteri is very variable, depending on whether the cervix takes part in the inversion or not. The cervix gener-

ally, but not always, shares the fate of the vagina, and as long as the uterus lies in the vagina, as a rule, is not inverted; the fold corresponding to the os uteri at the base of the swelling is then as much as four centimetres deep, and

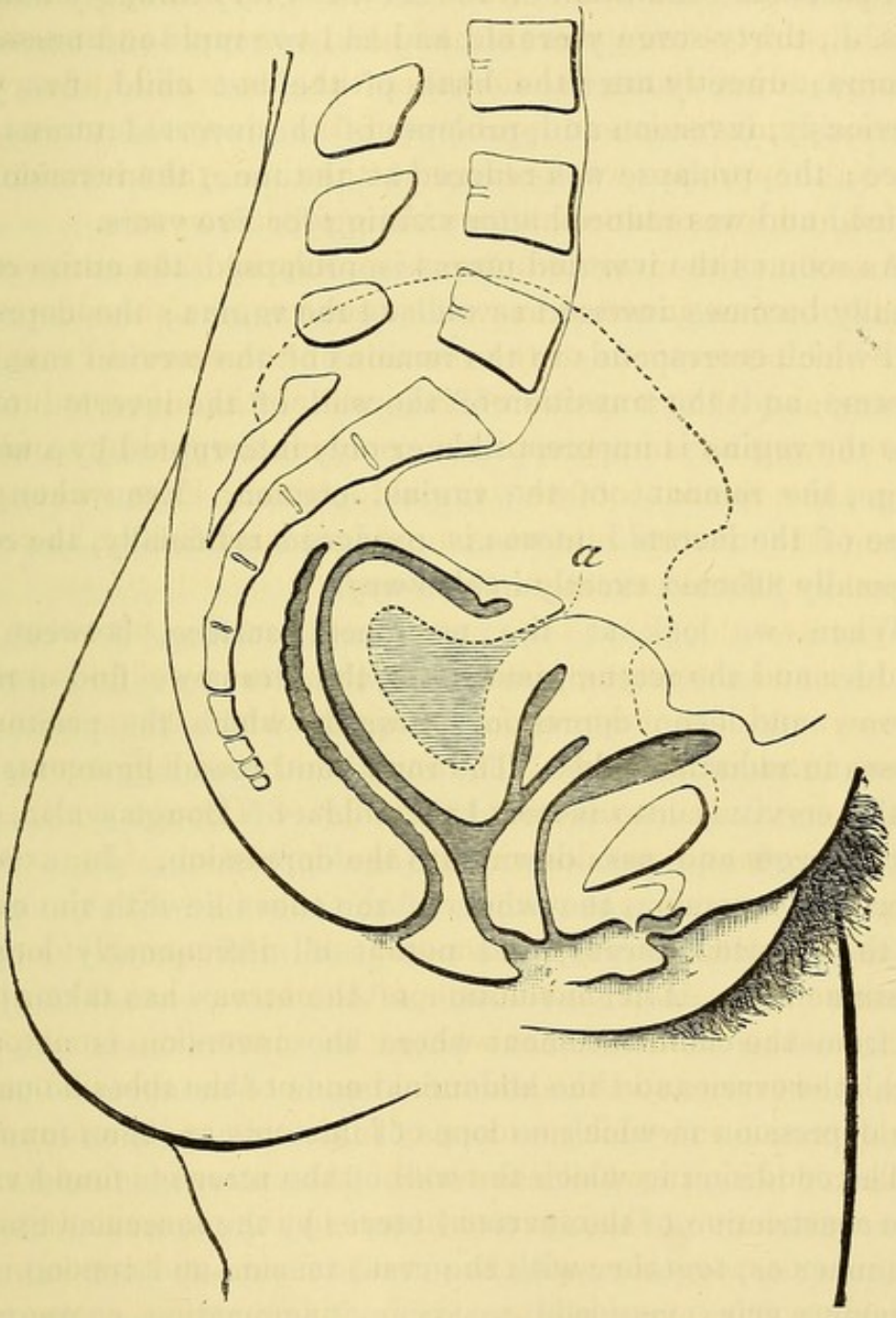


FIG. 115.—A case of puerperal inversion of the uterus of long standing, after W. A. Freund.

often deeper in front than behind. The reason that more of the cervical canal is generally left in front, and that the inversion of the uterus generally involves more of the cervix behind,

is most probably, as Freund very properly argues, because the posterior wall of the cervix is invested by peritoneum, while the anterior wall is imbedded in connective tissue. The preceding figure 115, after W. A. Freund, represents a case in which this particular condition of the cervix is very strongly marked. Mrs. J., thirty-seven years old had had two rapid and unassisted labours; directly after the birth of the last child, five years previously, inversion and prolapse of the inverted uterus took place; the prolapse was reduced at the time, the inversion remained and was reduced after existing for five years.

As soon as the inverted uterus is prolapsed the entire cervix usually becomes inverted as well as the vagina; the depressed fold which corresponds to the remains of the cervical canal disappears, and the transition of the wall of the inverted uterus into the vagina is imperceptible or only interrupted by a narrow ledge, the remnant of the vaginal portion. Even when prolapse of the inverted uterus is produced artificially, the cervix is usually affected exactly in this way.

When we look at the peritoneal surface, between the bladder and the rectum, instead of the uterus we find a rather narrow and deep depression, towards which the peritoneum passes in radiating folds. The round and broad ligaments, and if the cervix is also inverted the folds of Douglas also, seem to converge and pass down into the depression. In a recent puerperal inversion, the whole of the tubes lie with the ovaries in the inverted uterus, and not at all infrequently loops of intestine also. After involution of the uterus has taken place, or from the commencement where the inversion is not puerperal, the ovaries and the abdominal ends of the tubes lie outside the depression in which no loops of intestine are then found.

The condition in which the wall of the uterus is found varies. The constriction of the inverted uterus by the muscular tissue of the inner os, together with the great tension and torsion of the relieving veins, may lead to stasis, inflammation, or gangrene. If the acute stage pass away without causing a fatal result from shock, peritonitis, gangrene, incarceration of the bowels, or, as most often happens, from hæmorrhage, the conditions for the nourishment of the uterus may again become almost normal, and the organ may successfully accomplish its puer-

peral, and even subsequently its senile, involution; the condition on examination will then correspond. In many cases the wall of the inverted uterus is the seat of one or more projecting tumours under its mucous surface, myomata or sarcomata, which are then, at all events in the majority of cases, to be looked on as the cause of the inversion.

In some cases of long standing inversion, the peritoneal surfaces of the inverted uterus in contact with each other have been found glued together by peritoneal exudation, and the entire cavity of the inversion obliterated; in others the originally inner surface of the uterus has become adherent to the vagina, after previous ulceration of the mucous surfaces in contact.

§ 208. *Etiology.*—Enlargement of the cavity of the uterus, and relaxation of part of its wall, generally the fundus, are necessary conditions for the occurrence of inversion. As soon as the pressure inside the uterus becomes notably less than that in the abdominal cavity, the relaxed part of the wall is tilted inwards. A further condition for the occurrence of the second and third degrees of inversion is that the cervix should be dilated or capable of being dilated enough to allow the corpus uteri to pass through. It is during and immediately after the puerperal state that these conditions most commonly exist. Several cases seem to indicate that inversion may also develop during the puerperal state, days or even weeks after the completion of labour. The possibility of this taking place has been contested by some authors on theoretical grounds.* If one remembers how long after labour the uterus continues to be relaxed—or capable of again becoming so—such arguments must appear very unsound. I was once called in the fourth week after a labour at term, which to all appearances had been normal, to a woman who had been doing pretty hard work every day since the first day of her childbed, and feeling pretty well, until suddenly she became powerless and had moderate but uninterrupted hæmorrhage. I found the uterus, with the fundus above the umbilicus, doughy to the touch, the os uteri and cervix open, and the cavity of the organ full of clotted

* Beigel. *Op. cit.*, II., p. 322.

blood. I passed my whole hand into the uterus, dislodged the coagula, and ascertained that no remnant of the placenta was present. The uterus contracted upon my hand. The puerperal involution of the organ resulted in premature senile atrophy. In this case, which is certainly not an exceptional one, all the conditions for a puerperal inversion, as far as we know them, were present.

According to Crosse's tables about one third of the inversions of puerperal origin are fatal within the first month, and the remaining two thirds become afterwards chronic.

The presence of tumours in the uterus also gives a tendency to inversion. Of 400 inversions Crosse* set down 50 as arising from tumours. Scanzoni† was able to collect 22 cases of tumours of the uterus with inversion, published from 1838 to 1868. Details of the sort and manner of the attachment of the tumours were given in only a small number of the cases. Since then another series of careful observations has been reported. It is not, however, yet evident from the knowledge we at present possess, what chain of circumstances causes inversion of the uterus to arise from a few only of the gigantic number of tumours of the uterus. As Scanzoni has justly pointed out, in the majority of the accurately reported cases it has not been tumours with pedicles, polypi, but submucous or interstitial tumours with broad attachments which have led to inversion, and he is undoubtedly right in attributing to the decline of the muscular tissue at the seat of attachment of the tumour, a material share in the origin of inversion. In consequence of the contractions of the uterus constantly recurring at the menstrual periods, when from the relaxation of the uterine wall the tumour reaches down to the inner os, it acts just as a fibrous tumour with a long pedicle often does, and in process of time dilates the cervix in such a way that some day, under the force of intra-abdominal pressure and uterine contraction, it, and with it the relaxed wall of the uterus in which it is imbedded, is borne down through the os uteri.

The idea that some peculiar condition of the wall of the uterus, due to individual idiosyncrasy—perhaps a localised

* Crosse. *Op. cit.*, p. 1.

† Scanzoni. *Beitrage*, Bd. v.

atrophy of certain well-defined segments of the muscular tissue, is a condition for the occurrence of inversion of the uterus, is supported by the fact, related by Baudeloque, Tyler Smith and others, that inversion of the uterus has taken place in one and the same woman in several successive confinements, and also by the fact recorded by other authors that inversion has occurred after the removal of an intra-uterine tumour. C. Braun, who perhaps of all gynecologists of the present day can produce the greatest number of observations of inversion of the uterus, saw two cases of this sort.

§ 209. *Symptoms and course of inversion.*—After the symptoms of the acute stage have passed away, there is a constant and profuse watery and purulent discharge. Profuse menstruation, protracted and exceedingly copious, and hæmorrhage occurring during the intervals lead to extreme anæmia.

If the involution of the inverted uterus is complete, the local troubles may be comparatively slight. Unless the cervix is inverted, neither the functions of the bladder nor defæcation need be interfered with.

Should the inverted uterus become prolapsed, serious troubles usually come on at once. Swooning and vomiting, with insupportable feelings of pressure and tension in the sacrum; symptoms that are perhaps to be attributed to the traction on the peritoneum, and which, as we are informed, immediately cease when the uterus is replaced in the vagina.

Cases have occurred in which puerperal inversion has existed for twenty or thirty years (Denman, D'Ontrepont, de la Motte, Charles Lee, Lisfranc, White); there have even been cases of this affection, in which medical advice was never sought for at all, and in which the old inversion was accidentally found at the post-mortem examination.

A few authentic instances of the spontaneous reduction of inversion of long standing have been reported (Tatscher, Baudeloque, Meighs); one such case has been published by Spiegelberg quite lately.

The development of inversion in consequence of tumours of the uterus seldom seems to give rise to serious disturbance. Hæmorrhage and serous secretion, and pains like those of

labour have already accompanied the development of the tumour, sometimes for years. These symptoms become more and more distressing until some day or other the inversion takes place, generally with a particularly profuse hæmorrhage. The serous and sanious discharges usually become more copious after the inversion has taken place, but this does not appear to be always the case. It is sometimes impossible to find out with any certainty, from the history of a patient, the time at which the inversion happened.

Observations have proved that, partly as the result of exposure to injury, partly from constriction at the internal os uteri, the uterus when inverted by a tumour may be the seat of gangrene, sometimes ending in death, sometimes in recovery.

Several cases have been known in which, after the removal of the tumour, the uterus has been reduced spontaneously; one such case was reported by Abarbanell, another lately by Schwartz, and I have myself given a third, (§ 205).

§ 210. *Diagnosis.* While the diagnosis of chronic inversion of the uterus is in some cases almost as simple as that of the acute puerperal form, it is in others very difficult indeed.

The tumour formed by the inverted uterus projecting into the vagina has great similarity with a myoma projecting out of the cavity of the uterus into the vagina. The doubt in the diagnosis often caused by the similarity between these two conditions is not always quite easy to solve, the less so as both uterine myoma and inversion may exist at the same time.

The anamnesis is of great help, as in most cases the symptoms can be traced back to some puerperal state, indeed generally to the very characteristic phenomema of an acute puerperal inversion.

The objective diagnosis that a tumour lying in or in front of the vagina is the uterus, is sometimes obtained directly, from the tumour itself. Its form, the unaltered condition of the mucous membrane of the corpus uteri, and the openings of the tubes, have been in some cases characteristic. But inversion cannot be excluded on the ground that these signs are not present. The consistence of the tumour is generally soft and elastic, but it seems that the consistence of the inverted uterus may vary as much as that of a uterine myoma lying in the

vagina. Sensibility and tenderness to the touch, or to the prick of a needle, is an attribute of the inverted uterus reported by many observers; it is a quality that uterine myomata certainly do not possess, but one which may be absent in inversion of the uterus also. A characteristic circumstance in the second degree, the commonest form of chronic inversion, is that the upper surface of the tumour, at a short distance above the os uteri, turns over downwards all round into the still uninverted part of the cervix; or, when the inversion is complete, that the tumour is continuous all round with the vaginal vault. The investigation of this condition requires the tumour to be drawn down from the abdominal wall, preferably under chloroform, and a combined examination with the whole hand in the vagina, because two fingers alone cannot reach the posterior margin of the tumour. Not reaching the seat of reversion all round is not sufficient to exclude all idea of inversion, for the groove in the turn of the inversion is not always broad enough to admit the finger to the bottom of it. Examination of the groove of the inversion with the point of the sound may sometimes be decisive; at all events there cannot be inversion if the sound passes without trouble between the edge of the tumour and the ridge of the os uteri to the distance of seven centimetres in any direction; there need not, however, be any inversion though the sound finds no admission to a uterine cavity. The internal os is not always easily passed by the sound when a uterine myoma is in the way.

The diagnosis is decided when it is proved that there is no corpus uteri above the vaginal vault, and that in its place there is a circular or transverse depression corresponding to the base of the questionable tumour.

In deciding on the absence of a corpus uteri above the vaginal vault, combined recto-hypogastric examination under chloroform is of much more value than examination by the sound. Two fingers introduced into the rectum, unless they are uncommonly short, reach up high enough above the tumour to meet the hand on the hypogastrium, and to ascertain with certainty whether the uterus is above or identical with the tumour. Even experienced examiners are recommended in such cases to pass the thumb of the hand examining per rectum

into the vagina, at all events occasionally; it is invariably necessary for those who have had less practice to do this, in order to be able to unite the results of the rectal examination in one conception with those of the previous vaginal one.

The combination of the results of the recto-hypogastric with those of the previous vaginal examination, into one conception, is materially assisted by passing a sound with a knob of ten or twelve millimetres, under the direction of one's own fingers, up to that spot in the vaginal vault, or cervical canal, which in the vaginal examination seemed to be the highest; then giving this sound to be held steadily by a trustworthy assistant while making the recto-hypogastric examination oneself.

The adjoining figure taken from W. A. Freund will show how difficult and how definite such an examination is. Freund's case of puerperal inversion of long standing already referred

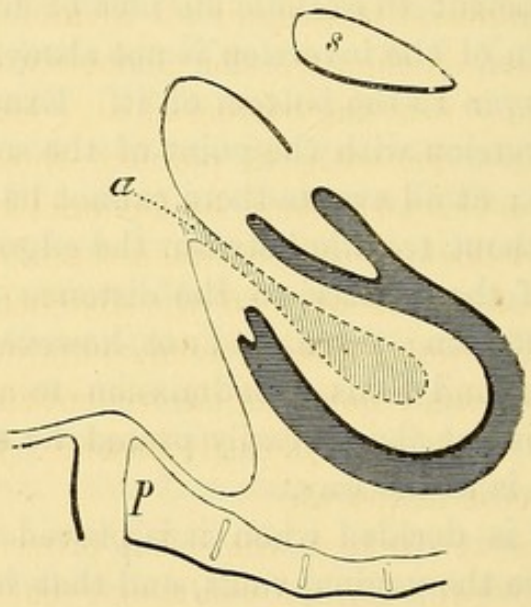


FIG. 116.—Diagram of inversion of the uterus, after W. A. Freund.

to (§ 207, fig. 115) is the foundation of the figure. The woman is supposed to be in the lithotomy position, *p* is the promontory, *s* the symphysis. The points that might lead to any doubt in the diagnosis have been intentionally exaggerated. Everybody who has had much experience knows how hard it is to estimate the distance between the fingers in the rectum and those palpating the abdomen; how difficult it is to estimate the size of a body between the two hands; how easily mistakes may be made; how doubt may arise, and how reasonable it may be.

The thickened anterior wall of the cervix, which in Freunds'

case was much hypertrophied just at the turn, is represented as projecting more than it did, and might, in a combined palpation, be mistaken for the corpus uteri. Measurements taken with the sound, after the direction of the corpus uteri has been exactly ascertained by bimanual examination, will frequently be sufficient to exclude this mistake. But it must be remembered that the uterus, though the seat of a myoma, may at the same time be atrophied, that the attachment of a myoma or sarcoma may involve not only the fundus, but also part of the anterior or posterior wall of the uterus, in either of which cases the measurement of the uterine cavity may be short, without there being any inversion. Compare fig. 21 with figs. 115 and 116. Masses of exudation or the ovaries and their appendages lying near the mouth of the inversion, may form a tumour and give rise to some uncertainty.

The most important diagnostic sign is the direct palpation of the mouth of the inversion on the surface of the peritoneum, *a* in figs. 115, 116. The fingers passed high up into the rectum can make this out distinctly, as a more or less widely open, round or transverse interruption in the continuity of the peritoneal surface, at the very spot at which the corpus uteri would project under normal circumstances. One sound passed into the vaginal vault, or cervical canal, and another into the bladder, can be felt by palpation in the rectum and hypogastrium, and will clear up the last remaining uncertainty about the local relation of the parts.

An important sign, which has been cited by G. Veit and Scanzoni, a sign that is present in many but not in all cases, is that forcible traction applied to the tumour usually completes the inversion. If the inverted corpus uteri is drawn forcibly downwards the remnant of cervical canal disappears; the same strain applied to a polypus seated at the cervix usually displaces the uterus downwards *in toto*, without altering its shape. I attribute particular importance to this sign myself, because it may, in cases in which no suspicion of inversion of the uterus has arisen, and in which the supposed polypus has been seized by forceps and drawn down to be cut off, attract the attention of the operator to the real state of the case just before it is too late.

§ 211. *Treatment.*—The treatment to be adopted in a case of puerperal inversion of long standing is not the same as that of one complicated by a tumour of the uterus.

In the latter case it is *à priori* probable that the tumour has been the cause of the inversion, and that if the tumour be removed the inversion will be reduced spontaneously; in any case the tumour may be more easily removed while the uterus is inverted, and the inversion of the uterus more easily reduced after the removal of the tumour.

The indications entirely depend on the nature of the tumour. If a myoma, it should be extirpated and time enough allowed to see whether the uterus may not be reduced spontaneously. If suspected to be malignant, the favourable opportunity of the inversion should be taken advantage of to avoid laparotomy, and the corpus uteri together with the tumour should be amputated by means of an infra-vaginal instead of a supra-vaginal operation.

§ 212. In the case of simple inversion reduction, when possible, is the chief indication for treatment, and the more recent the displacement the greater is the prospect of success. Reduction has, however, sometimes been effected after inversion has existed for several years, and Beigel has collected the following instances of such reductions. Daillez was successful in an inversion of eight months' standing, West in one of twelve, Berni in one of fifteen, Birnbaum in one of two years, Bockendahl in one of six years, Tyler Smith in one of twelve years' standing, Noeggerath reduced an inversion thirteen years old, White one of fifteen and another of thirty years, and Beigel himself reduced one inversion of nine years' and another of three years' standing, Marion Sims one twelve months old.*

Marion Sims' patient subsequently bore a child, as did also the patient whose twelve years' inversion was reduced by Tyler Smith, indeed the latter had several.

The chief obstacles to reduction are peritoneal adhesions, rigidity and increase in the volume of the uterine wall, and especially tightness of cervix.

The existence of adhesions of the peritoneal surfaces of the

* Emmet, Spiegelberg

pouch of the inversion cannot be diagnosed, and they have no effect in deciding the indications for treatment. According to Thomas' precept and example* we should therefore perform laparotomy in order to reduce an inverted uterus. Slight adhesions may otherwise be separated during the reduction, without our being aware of it, or more serious ones may prove insurmountable obstacles without our learning, before the uterus is amputated, what prevented reposition.

The increase in the volume of the uterine wall is partly due to stasis, partly to the results of local inflammation, and must, as far as possible, be remedied. As blood-letting is contra-indicated by the existing anæmia, a horizontal posture must be prescribed for some weeks, and the emptying of the bowels must be carefully attended to, if necessary by strenuous purging. The muscular tissue of the uterus must also be from time to time stimulated to contract, by cold and by the subcutaneous injection of ergot, for we know that whenever the resorption of inflammatory products is possible uterine contractions have a great effect in promoting it.

To obviate the difficulty in reducing the corpus uteri caused by narrowness of the cervix, Marion Sims has recommended that several longitudinal incisions should be made in the cervical segment of the tumour; advice that is certainly worth considering before resolving on amputation. With the same object Thomas recommends the dilatation of the funnel of the inversion from the peritoneal cavity by blunt instruments. We shall return to the consideration of this proposal (*vide* § 213).

It is always desirable in the first instance to endeavour to reduce the uterus by hand. The lithotomy position and profound anæsthesia will be necessary, and as the uterus is usually softer during menstruation or some irregular loss of blood, some such time should be chosen for making the attempt at reduction.

Some gynecologists in carrying out the reposition of the uterus commence with the fundus, others recommend that the cervix should be re-inverted first; if one way should not be successful the other should be tried. When the inversion is complete, and

* Thomas, *Diseases of Women*, p. 427.

especially if it is recent and puerperal, neither of the ways above mentioned is, *à priori*, to be unconditionally preferred to the other, but it is a different matter with old inversions, particularly with inversions of the second degree which are the most common. In these the lower segment or even the whole of the cervix uteri has preserved its normal direction, and I think the plan of replacing the inverted part of the cervix first is more likely to succeed.

In the commonest form of inversion, there are two rings of the uterine wall, one within the other, as represented by the broad black line in the accompanying diagrams (figs. 117 and 118), in which, for the sake of demonstration, the wall of the

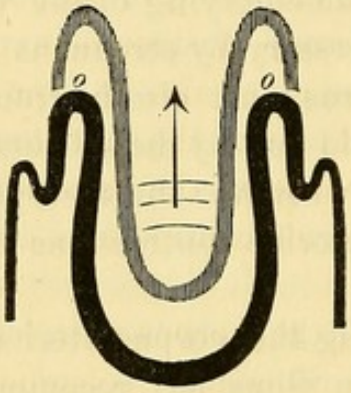


FIG. 117.—Reposition of the inverted uterus, Method A.

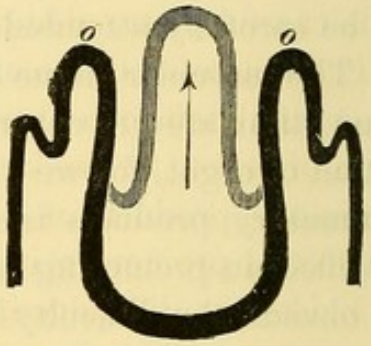


FIG. 118.—Reposition of the inverted uterus, Method B.

uterus has been drawn thin and the pouch of the inversion wide. Now if we commence the reduction by pressing the fundus uteri upwards in the direction of the arrow, as shown in fig. 118, we push a third ring of the uterine wall into the two concentric rings that already exist, a proceeding which unless there is plenty of room and the funnel of the inversion is very wide indeed affords no prospect of success. On the other hand, by laying hold of the inverted corpus uteri, as shown in fig. 117, and without thrusting it into itself pressing it upwards in the direction of the arrow so that the cervix uteri may first regain its normal pesition and shape, these rings of the uterine wall are not forced one into the other at all. The narrowness of the funnel of the inversion is just what generally constitutes the principle obstacle to reposition, and it is evident that the method A requires less room in this part than the method B.

As figures 113 and 114 show, the method A corresponds

with the mechanism of spontaneous re-inversion; on the other hand the method B allows the use of more force, because the edge of the funnel of the inversion can in employing it be more securely fixed from the hypogastrium or rectum, and because the pressure so applied, on the parts *o o*, materially assists the manipulation employed at the fundus—advantages which, in recent puerperal inversion where much depends on the rapidity of the reduction and where the uterine tissue is extremely extensible, are of material importance.

In a case of inveterate inversion of the second degree I would certainly, after preparatory treatment, first try the method A, and laying hold of the corpus uteri with my fingers extended round it, and compressing it as steadily and forcibly as possible, I would without relaxing the compression press the tumour upwards so as to return the inverted part of the cervix first. Of course this manipulation must be controlled by an opposing pressure from the other hand on the hypogastrium, so as to prevent any excessive stretching of the vaginal vault, for the uterus has in some cases been torn away from the vaginal vault. But we must always remember that in this method such opposing pressure, acting on the points *o o*, absolutely interferes with the intended reduction of the uterus. A much more reasonable proceeding than the application of such pressure to the edge of the funnel of the inversion is to fix the vaginal portion from below in the way Freund does. By introducing broad silk ligatures at several points of its circumference, and forcibly drawing the vaginal portion downwards, and by simultaneous pressure of the corpus uteri upwards, he doubles the effect of his manipulation for reducing the inverted uterus.

Marion Sims had remarkably rapid success in his case of twelve months inversion because, after the whole corpus uteri had been pushed up into the cervix, he pressed part of the uterine wall near one of the tubes forcibly into the tumour, a method that Kiwisch had already praised as being very effective. Pate of Cincinnati easily reduced an inversion of many years standing by fixing, and at the same time dilating, the ring of the inversion by the fingers in the rectum and bladder, while he carried out the reposition with his thumbs.

If such methods, repeated several times at intervals of several days, were unsuccessful, I would endeavour to obtain the advantages of the method B, without its detrimental effects, in the following manner. I would draw the uterus so far down from *a* towards *b*, during profound anæsthesia, that the inversion of the cervix should be complete. I would next, from the hypogastrium or rectum, fix the edge of the funnel of the inversion as firmly as possible at *o*, and then press the fundus upwards towards *c*, and finally to *d*, as represented in the adjoining diagram, Fig. 119. One could in this way use all the force pos-

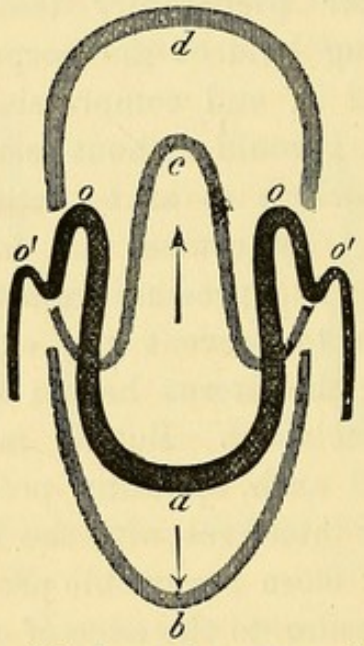


FIG. 119.—Reposition of the inverted uterus, modification of Method B.

sible, and yet avoid thrusting three rings of the uterine wall one into the other. Drawing down the corpus uteri in this way might also possibly have the advantage of loosening the peritoneal adhesions at the same time.

The line *a* shows the original shape of the inversion; when the inversion is completed by drawing the corpus uteri towards *b*, the fundus is pressed up towards *c*. As the original fold of the uterine wall *o o*, and the wall of the cervix, relatively normal in direction, which also materially narrows the mouth of the funnel of the inversion at *o*, have been previously removed, it will now be an easier matter to bring the uterine wall towards *d*, and into complete reposition. This, of course, only applies to cases in which the narrowest part, the neck, of the tumour formed by the inverted uterus is capable of some dilatation.

It seems inadvisable in attempting reposition to employ any of the variously shaped instruments, broad-topped, pestle or crutch-shaped, which have been proposed by both older and more recent authors, instead of the fingers, because their operation can be less surely controlled, and the idea of applying a permanent pressure to the inverted fundus uteri by means of solid bodies fastened in the vagina must be altogether rejected. On the other hand the occasional introduction of a tampon of india-rubber filled with air or water (Tyler Smith) has not infrequently proved very beneficial, particularly in cases where the inversion of the fundus uteri has been already reduced to a certain extent, for example, up to the height of the external os uteri. Complete re-inversion of the uterus has in several instances occurred while the tampon was in position; in Freund's case, in which ergot was administered both by the mouth and subcutaneously, it did so with violent pains like those of labour.

Emmet has suggested that if the corpus uteri has been reduced into the cervix, the edges of the os uteri should be closed underneath the fundus by sutures.

The reduction of an old inversion appears to be very rarely accomplished in the first sitting, and even after repeated ineffectual attempts one should not abandon the hope of success. Local reaction, or interference with the patient's general health from repeated ineffectual attempts at reposition, may prescribe a prolonged pause which we may profitably employ in further attempts to diminish the old infiltrations. Compresses of iodide of potash (glycerine with ten per cent. of the iodide) applied to the inverted uterus were of much service in Freund's case.

§ 213. When repeated attempts at reposition and intervals properly utilized in trying to soften the uterus have proved ineffectual, and we are irresistibly forced to believe that the reduction of the organ is impracticable, the question whether we should decide upon amputating the inverted uterus depends upon the symptoms of the case. If the patient is near the climacteric age it must be considered that the hæmorrhage will probably cease with the cessation of menstrual congestions, and that the local troubles will materially diminish with the senile involution of the uterus. See the cases of H. Stevens and Charles A. Lee in Marion Sims' book.

If the patient is in the prime of life we must, before abandoning all hope of subsequent re-inversion, remember that amputation of the uterus is a serious mutilation; we must also consider that to amputate the uterus and leave the ovaries still performing their function sets up conditions which may easily prove dangerous to life.

This last consideration brings me to the question whether in women of child-bearing age with old puerperal inversion, after all other attempts at reposition have proved vain, laparotomy with instrumental dilatation of the funnel of the inversion from the peritoneum and direct bimanual reposition should be tried, before one decides on amputation. The procedure cannot be more dangerous than amputation, and in case of success the reward is restitution to the normal state instead of mutilation; the prospect of success cannot be denied—in one of the two cases so treated by Thomas the success was complete. If the reposition could not be accomplished one would have to perform castration and would so, most probably, remove the most pernicious symptom of the inversion, the menorrhagia would cease, and the uterus would diminish in size from premature senile involution. And even if the persistence of the inversion should continue to menace the life or health of the patient, one could carry out the amputation of the uterus without the scruples which cannot but be associated with leaving ovaries still performing their function, without a uterus, and that is the principal reason why I have stated that in case of Thomas' method being unsuccessful castration is indicated.

§ 214. Except in cases in which a mistake had been made in diagnosis, amputation of the inverted uterus was formerly always carried out by the ligature. This method generally gives inexpressible pain, the shock it causes not infrequently gives rise to such very critical phenomena that the operation has to be abandoned, and, even when successfully carried out, the protracted gangrene of the uterus causes great danger of septic infection. Of forty-five patients operated on by ligature, collected by West, thirty-three died and the operation had to be abandoned in two others; the remaining ten recovered. This method therefore is far from answering the demand of the adage either as to the "tuto," "cito," or "jucunde."

A later mode of operating was applying a ligature in the first instance, and afterwards, when it was thought that the peritoneal surfaces had become adherent, cutting off the uterus. West collected three recoveries out of nine of these combined operations.

Apart from the risk of shock and sepsis, amputation of the uterus—whether by ligature, écraseur, cautery, or knife—is an extremely dangerous operation, because unless the pouch of the inversion is closed by the results of old peritonitis—a condition that can never be diagnosed before the operation—the stump of the cervix becomes re-inverted either immediately or at all events before the process of healing is complete, and blood, pus, or septic discharge finds its way into the peritoneal cavity. According to the statistics this danger diminishes with the age of the inversion, because in cases of long-standing the peritoneal pouch is more commonly closed by adhesions than in those that are of more recent date; nevertheless, as has just been said, this closing up cannot be ascertained before the operation.

The slipping back of the divided surface of the cervix into the peritoneal cavity is, however, not invariably followed by bad symptoms. C. Braun, who has removed the inverted uterus by the cautery or écraseur five times, and each time with a successful result, distinctly states that in two cases on which he operated in the year 1874 the cervix became re-inverted directly after the operation, leaving the peritoneal cavity open, the sound passing into it easily and deeply, and that the patients recovered completely. Provided that there is no hæmorrhage, re-inversion occurring in this way immediately, is certainly much more favourable than when it happens later.

It is in any case safer to prevent the cervix slipping back, and, in order to avert the danger of the return of the wounded stump into the abdominal cavity, the peritoneal surfaces of the funnel of inversion above the line of section should be secured to each other before the amputation of the corpus uteri. In the case I have described further back I had, with the immediate object of preventing hæmorrhage, fastened an india-rubber tube round the base of the tumour. If at any time during the removal of the latter the amputation of the uterus had been indicated by the opening of the pouch of peritoneum, as might

have happened, I would, before carrying it out, have introduced between the tube and the line of section a transverse row of ligatures extending as far across the tumour as the peritoneum, by which the stump could have been prevented from slipping back and the vessels of the broad ligaments compressed before being cut through.

Hegar and Kaltenbach have proposed the following plan for securing the stump which I adopt. They say "the closure of the peritoneal cavity may be ensured much more safely by the application of suitable stitching to the wound during the course of the operation, than by the antecedent ligature of the tumour *en masse*. The first act of the operation should consist in passing four or five wire or silk sutures from before backwards right through the inverted uterus. The part of the organ left behind being safely secured by these sutures, and with the broad ligaments prevented from slipping back in the direction of the abdominal cavity, one may with perfect safety cut off the uterus below them with knife or scissors, and then close up the flat wounded surface by knotting the sutures. This method also has the very great advantage that the hæmorrhage can be securely controlled by the compression of the stitches introduced."

"Even as a preliminary to the amputation, wire sutures may be employed with much better effect than ligature *en masse*. The introduction of the stitches is best accomplished with straight rather short lance needles, which are passed through the inversion first from behind forwards and next from before backwards, the patient being on her side. One might in this way secure the entire or the middle part only of the inversion in from three to five loops of wire knotted together not too tightly. The longer these stitches could be left in position without doing harm, and in particular without causing sepsis, or serious peritonitis, the more probably would they bring about the complete closure of the funnel of the inversion."

I should in future operate in this way, and should have the greatest confidence in the effect, in fixing the broad ligaments and compressing their vessels, of the wire sutures passed as a preliminary measure through the middle of the tumour, and think that the sutures for closing the wound need not then be introduced till after the removal of the uterus.

§ 215. I mentioned at the commencement of this chapter that there are some forms of partial inversion of the uterus which are essentially different from depression and introversion, the commencing stages of ordinary inversion.

The first of these forms affects the corpus uteri and appears to be extremely rare. It is a *deep funnel-shaped indrawing of a very limited portion of the uterine wall.* I have seen one instance of this only, and instead of any further remark on it give a report of the case.

Mrs. Sophia V., from T., 57 years old, as a child was delicate; she menstruated at 18, and when 28 years of age bore her first child, which was dead, not fully developed, and said to be hydrocephalic. She had an abortion in her next pregnancy, but at 32 became the mother of a healthy girl still alive. Menstruation ceased when she was 45, and irregular bleedings began to occur five years afterwards. When she was brought to the clinic on June 10th 1866 her relations declared that the hæmorrhage had been continuous for fourteen weeks, and that there had been a tumour projecting from her external genitals for about the same time.

The patient was in a high fever and delirious. A putrid fleshy mass about ten cubic inches in size, stinking like carrion, protruded forwards out of her external genitals. The fundus uteri extended somewhat more than a hand breadth above the symphysis. All round the tumour, which extended through the widely distended os uteri into the cavity of the organ, the finger could be passed into the short vagina. The hand when introduced into the uterus could reach the insertion of the tumour into the posterior wall near the fundus, where it formed a short pedicle about one inch in thickness. The other hand palpating externally at the same time could not discover any inequality in the roundness of the external surface of the uterus, and the vaulting of the internal surface was also perfectly even; inversion therefore seemed to be excluded. After the uterus had been washed out with chlorine water, as well as was possible under the circumstances, I seized the tumour at its base with the index and middle fingers in the way shown in fig. 120, and cut it off close to the volar surface of the fingers with Siebold's scissors. An injection of chlorine water made, ac-

cording to previous arrangement, directly after the tumour was extracted gave rise to such violent pain that the patient, who up to that time had reacted little under manipulation, cried out. Examination of the cut surface of the tumour disclosed a narrow cleft which was about two centimetres long, and led into a funnel about 1·5 centimetres deep, covered with smooth epithelium. Microscopical examination left no doubt that this funnel was invested with peritoneum, of which about six square centimetres were removed from it. The uterus contracted well and permanently. There was some peritonitis, but after three weeks the patient was discharged cured, and when from time to time she subsequently brought her daughter for advice, re-

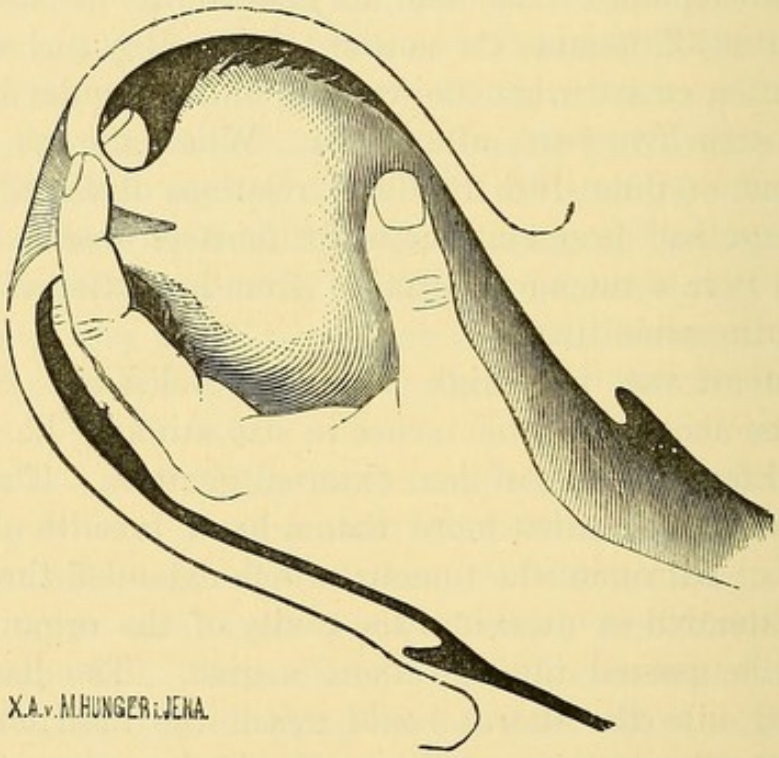


FIG. 120.—Partial inversion of the fundus uteri.

ported herself as quite well. In fig. 120 the peritoneal funnel, of which only the part cut off came directly under observation, is completed.

I do not believe that one can explain this case as an ordinary inversion interrupted in its commencing stage. On the contrary, it seems to me that the great elongation of the funnel of peritoneum shows what obstinate and successful resistance the uterus of Mrs. V. offered to the operation of circumstances that in other cases lead to inversion.

§ 216. *Ectropion of the os uteri* is the other form of partial inversion of the uterus, which has to be noticed here. This condition is characterised by the fact that the mucous membrane of the cervical canal is drawn outwards in such a way as to face the vagina, or if there is co-existing prolapse is freely exposed to view.

A slight degree of ectropion affecting about as much as one quarter of the length of the cervix is common enough; in quite exceptional cases the cervix is involved to a much greater extent even so that the inner os may be exposed to view (Klob), and it is by no means certain that the internal os is an absolute limit to inversion thus commencing at the external os. The opinion that Isaac Taylor has formed on the basis of observation is that inversion of the cervix may extend to the corpus uteri and ultimately lead to complete inversion of the uterus. The original work by Taylor not being within my reach, I have not been able to form any personal opinion on the matter, and only quote from Beigel and Braun.

§ 217. *Ectropion* has in reality three causes, of which any one is sufficient but of which, from proximate reasons, the first and second are generally to be found in simultaneous or successive action in every case. These causes are:—

(1) Radial traction outwards at the margin of the os uteri, such as takes place most uniformly and continuously in prolapse of the uterus. The inversion of the vagina extends to the vaginal portion and teases the cervical surface of the latter outwards. This partial inversion from the radial traction of the vagina is most marked in old standing prolapse where the uterus is relaxed and without any infiltration. The inner wall of the cervix, recognisable by its brighter redness, its moist shiny appearance (single layer of cylindrical epithelium), and its folds, even if it has been exposed to a considerable extent resumes its normal position if the uterus be replaced, and the tension of the vaginal wall upon it removed.

In consequence of the irritation to which the everted cervical mucous membrane is exposed, and the disturbance in the circulation caused by the displacement, the part forming the ectropion often swells considerably.

The form of the ectropion just described may be complicated

in very many ways with the form to be presently mentioned, and of course may not then disappear immediately, if at all, when the position of the uterus is corrected.

(2) In other cases the ectropion arises from the swelling of the cervical mucous membrane, and of the tissue immediately below it, generally during the existence of general or cervical endometritis. This swelling is sometimes merely the result of a purely local stasis, as in the ectropion, generally more marked on the posterior lip, which so often accompanies retroflexion. When there is no displacement of the uterus, and no deep fissures on the circumference of the os, and there is an ectropion—and even in a virgin uterus there may be one under these circumstances of a high degree and accompanied by considerable swelling of the subjacent tissue—there is reason to suppose the affection of the cervical mucous membrane, which will also be revealed by numerous prominent follicles and a copious muco-purulent discharge, to have been the primary one.

(3) A third cause of ectropion is unilateral or bilateral laceration of the cervix, generally caused by a previous labour. As a rule one can make out distinctly the cicatrix of the laceration on the rim which divides the vaginal and cervical mucous membranes, and the narrow white scar generally extends above the seat of the division up into the vaginal vault.

§ 218. *Diagnosis.*—It must be mentioned in regard to the diagnosis of ectropion, that the cervical mucous membrane unaltered or only swelled from catarrh distinguishes itself so remarkably by its redder colour, its moister surface, and frequently by its prominent folds, from the original vaginal surface of the vaginal portion, that the limit between them can generally be distinctly made out, and that only to a very uncritical eye can there be any confusion with an ulceration. The expression "erosion" is one very imperfectly defined, and what is described as erosion is generally ectropion. If the metritis and endometritis of which erosion is a symptom be properly treated, more especially if one abstains from the aimless application of caustics to the mucous membrane of the part in question, one may observe that the healing of the erosion consists to but a very slight extent in its skinning itself over with vaginal epithelium, and much more in the everted inner surface of the cervix contracting itself back into its normal position.

It is important to call the attention of those who are not very experienced to the fact that setting the vaginal portion in position in any cylindrical speculum causes considerable distension of the vaginal wall and increases the gaping of a wide, relaxed, or even lacerated os uteri, and so increases any ectropion that may be present.

C. Mayer (*Klinische Mittheilungen*) and Scanzoni (*Chronische Metritis*) have both most properly insisted on the fact that with the cylindrical speculum, especially with one with a rectangular end, one may easily evert a soft cervix to some extent, and so cause an artificial ectropion; a fact that has certainly led to many errors in diagnosis and much mistaken treatment.

Anyone, therefore, who wishes to form a correct idea about the existence and size of an ectropion, should make his examination with the finger and a duck-billed speculum rather than trust to the use of the cylindrical speculum.

Even when the hypertrophy of the everted lips of the os uteri is very considerable, the limit between the original cervical and vaginal surfaces is generally very distinct. Ulceration, papillary hyperplasia or cicatrices from deep cauterization, may make this limit indistinct, but can seldom cause any doubt as to the existence of an ectropion.

A voluminous ectropion with great swelling of the lips and a mucous membrane that bleeds easily, perhaps with old parametritic fixation of the uterus—a complication not at all exceptional, may appear deceptively similar to carcinoma of the vaginal portion before the commencement of ulceration. The rapid success or failure of a course of treatment decided upon the more favourable supposition, or the microscopic examination of an excised fragment, will determine the diagnosis.

§ 219. *Symptoms of ectropion.*—Since ectropion of the os uteri is almost always associated with other serious affections of the uterus, it is not easy to decide what symptoms in any particular case are exactly due to the ectropion, and what to the co-existing cervical catarrh, to the catarrh of the corpus uteri, to the displacement, or to any inflammatory affection that may be in action.

There is almost always a relatively copious secretion from the everted part of the mucous membrane; in a few exceptional

cases I have ascertained that local irritation limited to the everted mucous membrane immediately gave rise to some pain, to some ill-defined feeling of discomfort, or to some sort of distinctly morbid sensation, such as pain in the stomach or umbilical region, which constituted one of the chief causes of the patient's complaints. I have in many cases, on the removal of the ectropion, even when some other inflammatory complication that existed was not cured at the same time, found the subjective feelings and general condition of the patient become decidedly better. And I believe that I am justified in concluding, that in those cases in which ectropion exists, no inconsiderable number of the many morbid symptoms associated with chronic metritis are due to the ectropion.

§ 220. *Prognosis of ectropion.*—From what was said about the symptoms it seems that ectropion has in many cases no small share in causing the trouble and disturbances in the general state of health which are usually associated with a chronic metritis. In the vast majority of cases the everted part of the vaginal portion also shares in the senile involution of the uterus. This is not always the case, and ectropion persisting beyond the climateric age may have a greater importance in regard to the health of the person affected than we are aware of. If we look for the original cause of carcinoma in some irritation affecting the mucous membrane, and consider that the mucous membrane of an ectropion of the cervix uteri is at all events exposed to a far greater number of irritants than the same membrane in a normal situation, that when carcinoma of the vaginal portion comes under observation in the early stages of its existence, it can nearly always be traced to a much greater extent upon the cervical mucous membrane than on the vaginal surface of the cervix uteri, and furthermore that the carcinomatous cervix uteri generally displays in these early stages a typical picture of acute ectropion, there will seem to be some justice in the suspicion that the relation between ectropion of the os uteri and carcinoma of the cervix, is not only important in diagnosis, as above mentioned, but is also etiological. I myself believe that a cervix affected with ectropion is more disposed to carcinomatous disease than one that is not so affected, and in this I concur completely with Breisky, look-

ing upon his observations as a valuable basis for the opinion just expressed.

§ 221. *Treatment of ectropion.*—Ectropion when found with prolapse or retroflexion of the uterus, as has already been stated, depends at all events to some extent upon the displacement, and when the latter has been removed it is generally greatly reduced. In the absence of traction on the os uteri, and after the removal of the impediments to the circulation, the eversion of the cervical surface and the infiltration of the lips of the os uteri disappear, in many cases remarkably quickly.

I have often observed this myself, and therefore, even when displacements are associated with extensive ectropion and considerable swelling of the everted lips of the os, proceed at once to the reposition of the uterus. When the uterus has lain for some months in its normal position, it is often reduced almost or altogether to its normal size, and the cervical catarrh and ectropion have both disappeared. It is in comparatively few cases only that the lips of the os uteri have undergone any permanent increase in size, and that operative treatment of the ectropion is therefore necessary.

Where, without the existence of any displacement of the uterus, there is a subacute metritis with much cervical catarrh and ectropion, we often see the spontaneous involution of the ectropion occur on the adoption of the treatment indicated by the catarrh. Washing out the uterus frequently with carbolic acid solution, deep scarification of the swollen lips of the os uteri, and the free incision of any prominent follicles on them or in the cervical canal, contribute materially to the cure.

It is evidently an important matter to define if possible the proper plan of treatment for chronic metritis, diverse in form and complicated in type as it often is. To discuss the various points in connection with ectropion, which influence this, would carry us too far beyond the scope of this treatise. But I would expressly defend the above statement against being misunderstood as a recommendation that in every case a trial should first be made whether by reposition of the uterus or some other beneficial regulation of the conditions of its nourishment, the ectropion may not be converted into a retrograde condition. Many an ectropion will be at once recognised

by an experienced gynecologist as one to be only completely cured by operation. And in regard to others it is to be remembered that as by the cure of a subacute metritis the ectropion, which is a result of it, is cured also, so also the operative treatment of a long standing ectropion may have the most beneficial influence on co-existing chronic metritis.

Ectropion, whether due to local causes or the local appearance of general metritis, always lays particular claim to our very careful attention, and the relation it has to carcinoma, already alluded to, makes it our duty not to allow any considerable degree of it to continue permanent.

The removal of an ectropion which depends simply on swelling of the tissue of the lips of the os uteri, and of the cervical mucous membrane, is best effected by the wedge shaped excision of one or both lips, with subsequent stitching in Simon's way (see figs. 101 and 102, p. 289).

In those cases however in which lateral laceration of the vaginal portion is evidently the cause of the ectropion, and no great disease of the tissue of the everted parts as yet exists such as would make an amputation seem admissible, the only rational proceeding is to restore the original shape of the cervix uteri as Emmet proposes, by freely exposing the edges of the cleft, and afterwards uniting them with sutures.

SUMMARY.

Inversion of the Uterus. The degrees of inversion are illustrated by a case of spontaneous reinversion of the uterus after the removal of a tumour from the fundus.

The diagnosis is decided by demonstrating that no corpus uteri projects into the abdomen, and by finding in its place the funnel-shaped mouth of the inversion. Certainty is obtained by bimanual recto-abdominal palpation, while a sound with a large knob is held steadily in the vaginal vault.

Indications. Myomata may be removed from the inverted uterus and spontaneous reinversion expected. Tumours of a suspicious character indicate amputation. If the inversion is simple, even though of long standing, manual reposition is indicated, the only instrument admissible being a tampon

of india-rubber. Irreducible inversion indicates amputation, but before deciding on amputation in young women Thomas' method of dilating the funnel of the inversion from the peritoneal side after laparotomy should be tried. If even then the reduction cannot be effected, the ovaries should be removed. The amputation may be done after Braun's method by the actual cautery or after Hegar's, the stump being secured.

Partial inversion. The deep funnel-shaped indrawing of the uterine wall, which occurs during the birth of large myomata with insertions near the fundus, should cause great caution in the extirpation of such tumours.

Ectropion must also be considered as a partial inversion. It may be very like carcinoma in appearance, indeed the everted cervix in ectropion offers a particularly favourable ground for the development of carcinoma. (Breisky).

After correction of the position of the uterus, incision of the follicles and treatment of the catarrh, ectropion often disappears. When considerable it may be cured by Simon's wedge-shaped incision, or if caused by a laceration by Emmet's operation.

LITERATURE.

Much valuable information on the subject of this treatise will be found in the corresponding chapters of the text-books of normal and pathological anatomy, and in the manuals and text-books of gynecology. It does not seem necessary to include in the list of the literature these works, or the very large number of clinical observations that have been published. I have, however, endeavoured not to omit anything essential.

The literature has been arranged, as far as possible, according to the chapters of the book; those works related to several chapters being placed among the general literature under Chap. III. and IV.

Chapter I.—The Normal Position of the Uterus.

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